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PRESENTATION.

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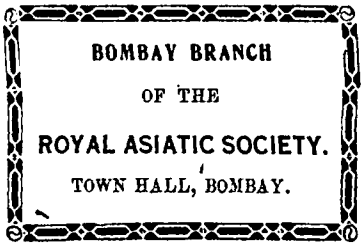

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SUPPLEMENT

TO THE

ENGLISH BOTANY

OF THE LATE

Sir J. E. SMITH and Mr. SOWERBY.

TO

THE DESCRIPTIONS, SYNONYMS, AND PLACES OF GROWTH

BY

WILLIAM BORRER, Esq., F.R.&L.S.,
CHARLES C. BABINGTON, Esq., M.A. F.L.S.,
REV. MILES J. BERKELEY, M.A. &c.,
WILLIAM WILSON, Esq., F.L.S.,

AND OTHER EMINENT BOTANISTS.

57283
a

THE FIGURES BY

JAMES DE CARLE SOWERBY, F.L.S. &c.,

AND

JOHN WILLIAM SALTER, A.L.S. &c.

"..... Natura
Non habet extremum; caret ergo fine modoque."
LUCRET.

7X p1

VOL. IV.

LONDON:

SOLD BY THE PROPRIETOR, J. W. SALTER, 8 PARK PLACE WEST, CAMDEN TOWN; MRS. SOWERBY, 3 MEAD PLACE, LAMBETH; SIMPKIN AND MARSHALL, AND ALL BOOKSELLERS.

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57283

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PREFACE.

In presenting our fortieth volume to the public, some apology seems due for the indefinite protraction of a work, above fifty years old, and which has been rendered a national one by the liberality and co-operation of all British botanists. The nature of the subject must be our excuse, since fresh observation is every year swelling the list of indigenous species, and that, too; in a ratio with which our faltering steps cannot keep pace. Among the Cryptogamia such an increase might be anticipated; but who would have thought, that, after fifty years had elapsed, and nearly 3000 plates been published in "English Botany,"— there should remain 90 reputed species of flowering plants, exclusive of the *Rubi*, not yet illustrated in this work? Yet such is the case; and, with these before us, we cannot write 'FINIS' yet, though we may congratulate ourselves that each additional volume is a complete and independent work.

With regard to the stores of *Cryptogamia* yet unfigured, Mr. Ralfs's beautiful monograph of the *Desmidieæ* has rendered it quite unnecessary to illustrate again the species there published, and for the Marine

Algæ, Dr. Harvey's fully illustrated periodical will content all English students of this tribe; we need not therefore swell future volumes with these, further than an occasional illustration of a new or generally interesting species.

The Mosses and Hepaticæ will yet afford materials for publication, unless we may hope for a complete account of them from the pen of Mr. W. Wilson, to whom this department of the work is so largely indebted;—to him, as to the Rev. M. J. Berkeley, Mr. C. C. Babington, and Mr. Borrer, all old and tried friends of the work, our very hearty thanks are due; and to the latter gentleman, besides the numerous and classic descriptions afforded to the work, we are indebted for a constant superintendence of the whole, and a critical revision of every proof sheet,—a labour of kindness best appreciable by those who have had similar tasks to perform.

Our future progress ought mainly to be among the flowering plants and ferns; we shall be glad, therefore, to receive, during the present summer, fresh specimens of new plants for drawing from any of our friends; and, should health and leisure be permitted us, we hope to begin a new volume with the new year.

8 Park Place West, Camden Town,
May 19th, 1849.

March 1st 1843

TRIFOLIUM Bocconi.

Boccone's Trefoil.

DIADELPHIA Decandria.

GEN. CHAR. *Flowers* more or less capitate. *Pod* scarcely longer than the calyx, never bursting, but falling off entire.

SPEC. CHAR. Heads lateral and terminal, sessile, ovate-cylindrical; flowers sessile, crowded. Calyx elliptical, not inflated; teeth unequal, subulate, straight. Leaflets obovate and oblong-lanceolate, naked above. Stipules small, with a subulate point. Seed small; radicle slightly prominent.

SYN. Trifolium Bocconi. *Guss. Fl. Sic. v.* 2. 495. *Ten. Syll. Fl. Neap.* 372. *DeCand. Fl. Fr. v.* 5. 560. *Prod. v.* 2. 192. *Duby Bot. Gall.* 130. *Reich. Fl. Excurs.* 491. *Spreng. Syst. Veg. v.* 3. 216.

T. Bocconii. *Koch Deutsch. Fl. v.* 5. 270. *Pollin. Fl. Veron.* 519. *note.*

T. Boccone. *Savi Bot. Etrusc. v.* 4. 21. *Seb. et Mauri, Fl. Rom.* 251. *Loisel. Fl. Gall. v.* 2. 123.

T. semiglabrum. *Brot. Phyt. Lusit. t.* 63. *f.* 2. *v.* 1. 155.

"T. nodiflorum turbinatum. *Bocc. Mus.* 142. *t.* 104."

Trèfle de Boccone. *Desvaux Flore d'Anjou,* 340.

OUR lower figure is from the produce of seed gathered by the writer in August 1840, at the same time with the

specimen given in outline, on a dry fence at Cagewith, near Ruan Minôr, Cornwall, where, in company with Mr. Babington, he first observed this Trefoil in July 1839. On both occasions the plants were in a very stunted state, and all found in one spot only. The latter circumstance might lead to some doubt whether they were truly native, the previously noticed localities of the species being in the very South of Europe, with the exception of one place in Anjou*; yet the situation seems to preclude such doubt, especially as the plant is scarcely known in gardens. It bears moreover so much general resemblance to *T. striatum*, although perfectly distinct, that it may probably have been overlooked elsewhere. It appears to have been first published in 1697, by Boccone, whose name Savi first attached to it in the Transactions of an Italian society.

Root annual. Stems several (except in starved plants), round, pubescent; the central one erect, the others longer and procumbent. Leaves on short stalks, the uppermost almost sessile; leaflets very short-stalked, obovate or subrhomboid on the lower leaves, oblong-lanceolate on the upper, more or less conspicuously denticulate, smooth on the upper surface, slightly hairy beneath and at the edges. Stipules connected by a narrow amplexicaul base, somewhat membranous, with coloured nerves, obliquely triangular, with a curved, herbaceous, subulate point; even those under the terminal heads but slightly dilated. Heads of flowers at first ovoid, soon becoming cylindrical, sessile in the axillæ of the leaves; the lateral ones sometimes on the stem itself, which then becomes flexuose, more generally on branches, which are mostly short and simple, but in luxuriant plants are again divided and spread at a wide angle; the penultimate head usually, and sometimes the next below it, close to that which terminates the stem or branch. Flowers sessile, densely crowded: calyx elliptical, obsoletely angular, pale, covered with appressed hairs; the nerves but slightly prominent, especially the intermediate ones; teeth unequal, green or reddish, tapering, acute,

* In the supplementary volume of the *Flore Française*, DeCandolle inserts *T. collinum*, *Bast. Fl. de Maine et Loire*, as perhaps distinct; but in his later works it is referred to *T. Bocconi*.

straight, or somewhat connivent, shorter than the tube, neither expanded nor dilated after flowering, nor is the tube inflated. Corolla not much longer than the lowest tooth of the calyx, white, or tinged with pink, soon turning brown: standard but little exceeding the other petals, straight, compressed; its border oblong, not widened upwards. Pod membranous, subglobose, containing one small yellow seed, with a little prominence over the radicle,—an appearance owing, as Mr. Babington observes, rather to a contraction of the testa on each side than to any real prominence of the radicle itself. He also remarks that the filaments are more decidedly thickened upwards, with a sudden contraction at the top, in the stamina of *T. Bocconi* than in those of the species nearly allied to it.

In *T. striatum* the leaves are of a broader figure, and hairy on both sides; indeed the whole plant is more hairy. The stipules are much larger, especially those that subtend the heads. The heads are soft, of fewer, larger, and less densely crowded flowers. The calyx-tube is deeply grooved, more ventricose when in seed, with ten strong nerves, its teeth less unequal and more spreading. The seed is twice as large, its radicle not prominent. Seringe in *DeCand. Prod.* describes it "badium." We find it sometimes brown, sometimes yellow, possibly from a difference in the ripening. This plant flowers earlier than *T. Bocconi.*

We are indebted to Mr. Woods for assistance in the synonymy.—W. B.

a. Seed, natural size; *b.* the same magnified.

RANUNCULUS circinatus.

Rigid-leaved Water Crowfoot.

POLYANDRIA Polygynia.

GEN. CHAR. *Calyx* of 5, rarely 3 leaves. *Petals* 5 or more, with a nectariferous pore at the base. *Pericarps* without awns.

SPEC. CHAR. Stem submersed, ascending. Leaves all submersed, nearly sessile, capillaceo-multifid; segments short, 2 or 3 times forked, spreading in an orbicular plane. Petals broad, much longer than the calyx. Stamens numerous. Carpels transversely rugose, semi-obovate, with an incurved point.

SYN. Ranunculus circinatus. *Sibth. Fl. Oxon.* 175. *Reich. Fl. Excurs.* 719. *Ic. Fl. Germ. f.* 4575. *Bab. in Ann. Nat. Hist. v.* 3. 229. *Fries. Fl. Scan.* 74. *Drej. Fl. Hafn.* 192.

R. stagnatilis. *Wallr. Sched. Crit.* 285.

R. divaricatus. *Koch Syn.* 12. *Bluff. et Fing. ed.* 2. *t.* 1. *pt.* 2. 285.

R. aquatilis β. *Linn. Sp. Pl.* 781.

R. aquatilis γ. *Sm. Engl. Fl. v.* 3. 54. *Hook. Br. Fl. ed.* 5. 4.

R. aquaticus albus, circinatis tenuissime divisis foliis, floribus ex alis longis pediculis innixis. *Raii Syn.* 249.

IT gives us great satisfaction to be enabled to publish a figure of this pretty Ranunculus, and at the same time to confirm the accuracy of the late Professor Sibthorp, by whom it was first published as a distinct species, although,

owing to the insufficiency of the specific character given by him, Sir J. E. Smith was induced to consider it as a variety of *R. aquatilis*. For a full account of the reasons which are believed to warrant the restoration of this plant to the rank of a species, we must refer to a paper in the *Annals of Natural History* (*vol.* 3. *p.* 225), in which the writer of this has also claimed the right of specific distinction for *R. fluitans*, figured in our following plate.

In the present plant the stems are wholly submerged (the flowers alone rising just above the surface of the water), long, ascending, often branching at nearly all the joints, except a few of the upper ones, throwing out a few long, simple, fibrous roots from the lower joints. Leaves small, terminating below in a short, slightly sheathing, dilated base, which is in rare instances separated from the limb of the leaf by a very short petiole; the limb is divided into numerous short, rigid, terete, capillary segments, which are 2, 3, or 4 times forked, and all lie in exactly the same plane, which has a very regular orbicular outline, and is usually nearly at right angles with the stem and with its own sheath. Flowers large, on round solitary peduncles. Sepals very fugacious, concave, ovate, obtuse, with narrow, white, diaphanous margins. Petals nearly twice as long as the sepals, ovate, blunt, white, with a yellowish claw. Stamens numerous. Carpels in dense roundish heads, half-ovate, compressed, transversely wrinkled, usually glabrous or clothed with a few bristles, laterally tipped by the persistent incurved style.

This plant differs from *R. aquatilis*, *t.* 101, by its constantly submersed leaves never spreading into a spherical mass as they do in that plant (this is badly represented in *t.* 101.), by its half-ovate and laterally tipped carpels, those of *R. aquatilis* being unequally ovate and tipped with an erect style, and most remarkably by its very different general habit. It is usually found in still water, but appears to flourish equally well in swift brooks and rivers, often in company with its near allies *R. aquatilis* and *R. fluitans*, but never showing the slightest tendency to change into either of them. It appears to be generally distributed throughout the country. The specimens figured were gathered at Homersfield in Suffolk, on the 23rd of June 1840, at which time it was in full flower, although *R. aquatilis* had then long passed its beauty,—the latter producing its flowers in profusion at a time (May) when even the buds of our present subject have not made their appearance.—C. C. B.

2870.

RANUNCULUS fluitans.

River Crowfoot.

POLYANDRIA Polygynia.

GEN. CHAR. *Calyx* of 5, rarely 3 leaves. *Petals* 5 or more, with a nectariferous pore at the base. *Pericarps* without awns.

SPEC. CHAR. Stem floating. Leaves all submersed, repeatedly di- or trichotomous; segments elongated, setaceous, parallel. Petals broad, much longer than the calyx. Stamens numerous. Carpels transversely wrinkled, obovate, with an obtuse, straight, lateral point.

SYN. Ranunculus fluitans. *Lam. Fl. Fr. v.* 3. 165. *Reich. Fl. Excurs.* 719. *Ic. Fl. Germ. f.* 4577. *Koch Syn.* 12. *Sturm. Deutsch. Fl. No.* 67. *t.* 14. 15. *Gaud. Fl. Helv. v.* 3. 525. *Bab. in Ann. Nat. Hist. v.* 3. 229. *Leight. Fl. Shrop.* 256. *Drej. Fl. Hafn.* 192.

R. fluviatilis. *Sibth. Fl. Oxon.* 176. *Wallr. Sch. Crit.* 284.

R. peucedanifolius. *All. Fl. Ped. v.* 2. 53. *Schlech. in Linnæa* (1831), 576. *Host. Fl. Aust. v.* 2. 118? *Loisel. Fl. Gall. v.* 1. 392.

R. aquatilis δ. *Linn. Sp. Pl.* 782. *Sm. Fl. Br. v.* 2. 596. *Engl. Fl. v.* 3. 55. *Hook. Br. Fl. ed.* 5. *p.* 4.

R. aquatilis, ε. peucedanifolius. *DeCand. Prod. v.* 1. 27.

R. pantothrix, γ. peucedanifolius. *DeCand. Sys. v.* 1. 236.

R. sive Polyanthemo aquatili albo affine Millefolium Maratriphyllon fluitans. *Raii Syn.* 250.

ON the accompanying plate is represented the third species of *Ranunculus*, which, although distinguished by

Lamarck and Sibthorp, has been considered as a variety of *R. aquatilis* by most British botanists, whilst it is looked upon as a distinct species by nearly all the best of the continental writers.

The plant now under consideration is one of the greatest ornaments of our brooks and rivers, in which its floating stems sometimes extend even to 20 or 30 feet in length, their more usual length being 4 or 5 feet; they are thick, round, hollow, smooth, branched, leafy, wholly submersed, the flowers alone rising above the surface of the water, and producing long fibrous roots from their lower joints. Leaves, including their long petioles, from 3 inches to a foot or more in length, all submersed, repeatedly di- or tri-chotomous, with setaceous, elongated, parallel, obtuse segments; the lower ones upon long semicylindrical stalks, the upper sometimes nearly sessile semiamplexicaul by their broad, dilated, membranous appendages: sometimes at the extremity of the stem "a tripartite leaf or two, with divergent elliptical lobes, the central one shorter and entire, lateral ones bifid, smooth, dark green, shining above and paler beneath," has been observed. Flowers large, on round, smooth, thick, solitary peduncles. Sepals concave, ovate, obtuse, with narrow, white, membranous margins. Petals more than twice as long as the sepals, roundish-obovate, blunt, often slightly crenate at the end, white, with a yellow claw; nectariferous pores broader but shorter than in *R. aquatilis*. Stamens numerous. Carpels numerous, in dense roundish heads upon deflexed stalks, obovate, transversely wrinkled, laterally tipped by the short, persistent, straight, obtuse style.

Our present subject differs from *R. aquatilis* (*t.* 101.) by its remarkably elongated leaves, the segments of which are always nearly parallel, and never spread in a spherical manner,—its obovate carpels with a lateral but straight point, and its very different habit and remarkably larger size: from *R. circinatus* its leaves, carpels, and habit at once distinguish it. The specimens from which the drawing was made were gathered in a brook at Cherry Hinton, Cambridgeshire, on the 12th of June 1841, at which time it was just coming into flower. It there grows in a swift stream in company with *R. aquatilis* and *R. circinatus*, each of the three retaining its peculiar characters and habit in a marked manner. But, although it is usually found inhabiting swift streams, it sometimes occurs in stagnant water: indeed, some of the finest and most characteristic specimens that we have ever seen grew, in the utmost profusion, in a stagnant ditch near Mildenhall in Suffolk. Mr. Leighton finds it at Shrewsbury, growing upon the moist sandy margins of the river Severn, entirely out of the water,—when it assumes a more cæspitose appearance, but still retains all the essential characters of the species.—C. C. B.

March 1st 1843.

2871.

HYPNUM polyanthos.

Many-fruited Feather Moss.

CRYPTOGAMIA Musci.

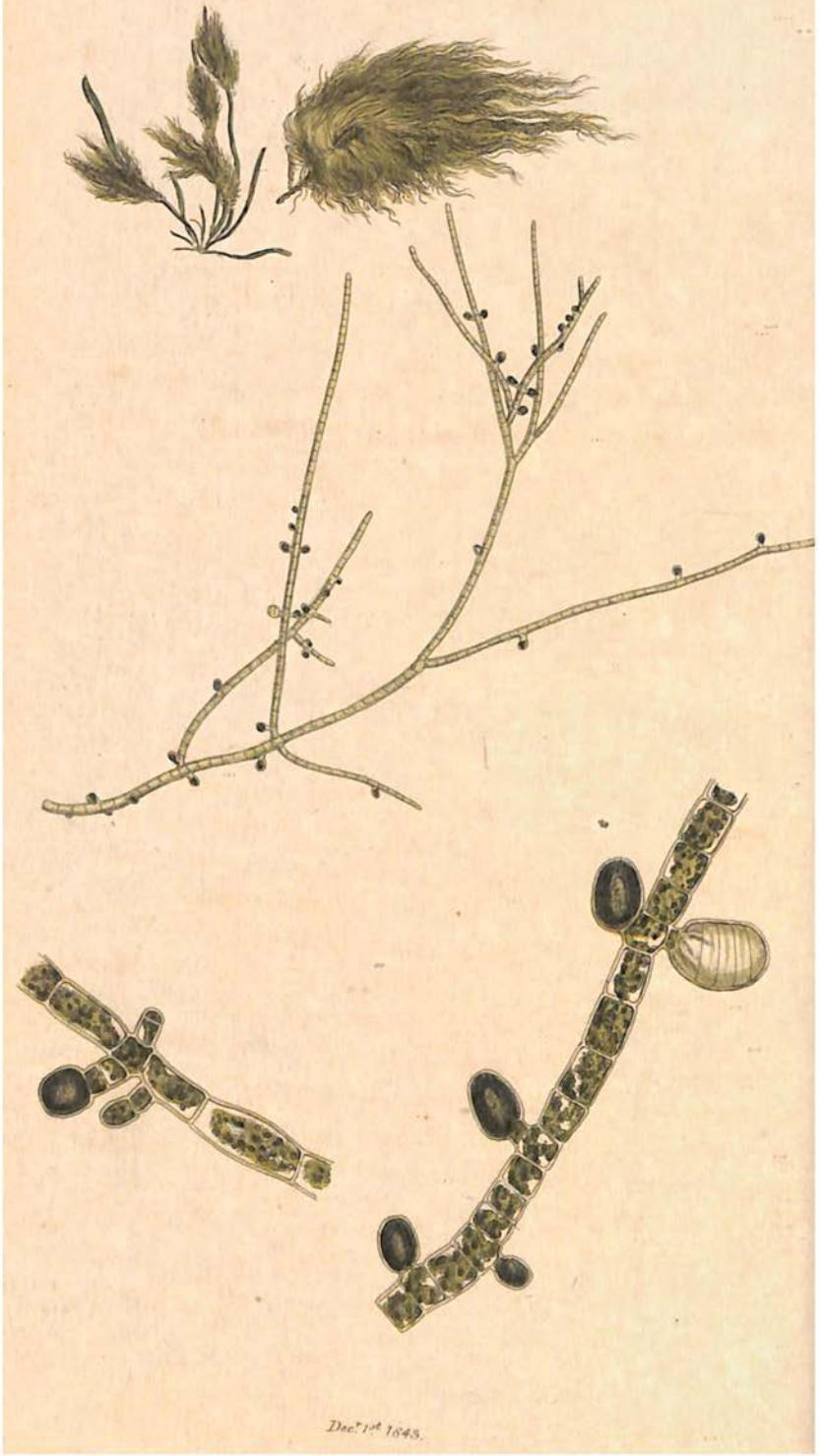
GEN. CHAR. *Fruit-stalks* lateral. *Peristome* double; outer one of 16 teeth; inner, a membrane cut into 16 equal segments, and usually with intermediate filiform processes. *Calyptra* dimidiate.

SPEC. CHAR. Stems creeping, tufted, irregularly branched. Branches short, simple, and slightly curved. Leaves subsecund, imbricated, lanceolate, acuminate, nerveless, entire. Capsule erect, ovate-oblong. Lid conical, acuminated.

SYN. Hypnum polyanthos. *Hook. and Tayl. Musc. Brit. ed.* 2. 164. *suppl. t.* 5. (*not Engl. Bot. t.* 1664.) Leskea polyantha. *Hedw. Musc. Frond. v.* 4. p. 4. *t.* 2. *Ejusd. Sp. Musc.* 229. *Schwaegr. Suppl. v.* 1. *pt.* 2. 178. *Grev. Scot. Crypt. v.* 3. *t.* 151.

OUR specimens were found upon trees, near Beaumaris, in July 1830. This moss is of rare occurrence in Britain, though it may perhaps have been sometimes overlooked, from its very close resemblance to the moss erroneously figured instead of it at *t.* 1664. of this work, which is now distinguished from *H. cupressiforme* by Dr. Taylor, under the name of *H. multiflorum*, in *Fl. Hib. Part* 2. *p.* 46. The subject of our present description affords an example of the doubtful expediency of blending the genus *Leskea* with *Hypnum*, inasmuch as it is the structure of the peristome which almost singly constitutes the distinctive mark, not only between this moss and *H. multiflorum*, but also between it and *Pterogonium intricatum* of Hedwig.

The stems creep to the extent of one or two inches and more, and are entangled together, forming dense patches from the numerous short branches, which are seldom if ever subdivided; they are slightly curved upwards. Leaves crowded, all directed upwards to one side of the stem, lanceolate and concave below, with a long acuminated or tapering point, very little spreading when wet, and when dry appressed to the stem, entire, except towards the apex, which is subserrulate, nerveless, or rather with the mere rudiments of two nerves at the very base. Perichætial leaves lanceolate, bluntish, toothed above. Fruit-stalk smooth, half an inch long and more. Capsule erect, or very slightly inclined, ovate-oblong, reddish. Outer peristome inserted below the mouth of the capsule, its teeth pale yellow, inflexed, destitute of any medial line, shorter than the inner peristome, which is whitish, divided more than half-way down into 16 acute, keeled segments. Annulus none. Lid conical, acuminate, subrostrate, the point turned to one side. —W. W.



Dec.r 1st 1843.

2872.

ECTOCARPUS pusillus.

Dwarf Ectocarpus.

CRYPTOGAMIA Algæ.

GEN. CHAR. *Stem* capillary, generally much branched, flaccid, jointed, bearing dark *capsules*.

SPEC. CHAR. Filaments sub-simple, or sparingly branched, interwoven. Branches bearing a few short, flexuous fibres. Capsules sessile, roundish-oblong, plentiful, often two or three together. *Harv.*

SYN. Ectocarpus pusillus. *Harv. Brit. Alg.* 41. *Wyatt Alg. Damn. No.* 303.

FORMING little, flexuous, intricate, pale olive, woolly tufts on *Polysiphonia nigrescens*, *Enteromorpha compressa*, and other Algæ. Filaments slightly branched, attenuated upwards, with a few more or less alternate, mostly simple ramuli, or "connected with each other by tendril-like divaricating fibres." Joints mostly twice as long as broad; but sometimes they are longer, and sometimes very much shorter. Capsules dark, abundant, of a broad oval form, flattened at their tips, with a pellucid border, generally alternate, but sometimes opposite or even whorled; they are occasionally borne on a short branch, consisting of one or more joints. Found at Torquay by Mrs. Griffiths, and at the Land's End by J. Ralfs, Esq., who kindly communicated specimens.—M. J. B.

Dec.r 1st 1843.

2873.

JUNGERMANNIA calycina.

Large-Calyx Jungermannia.

CRYPTOGAMIA Hepaticæ.

GEN. CHAR. *Common receptacle* of the fruit none. *Perianth* or *Calyx* monophyllous, tubular (rarely absent). *Capsule* 4-valved, terminating a peduncle which is longer than the perianth.

SPEC. CHAR. Frond diœcious, linear-oblong, subdivided, the margins elevated, wavy. Fruit on the upper surface of the frond over the midrib. Calyx ovate-oblong, tumid, subplicate, fringed at the mouth. Calyptra shorter than the calyx.

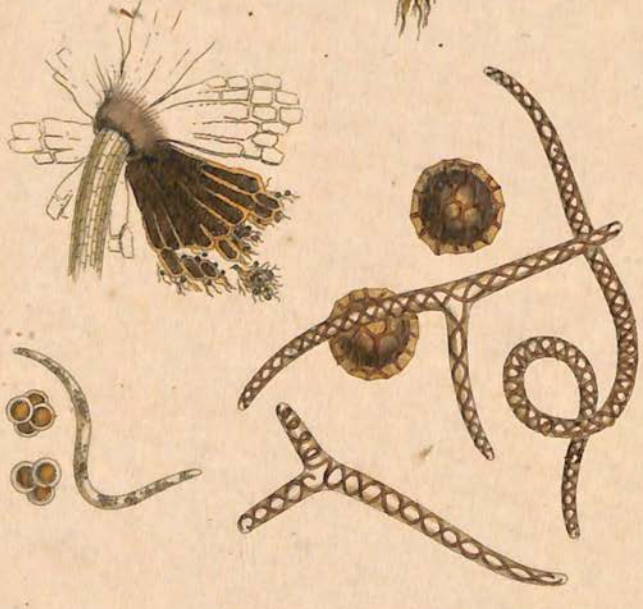
SYN. Jungermannia calycina. *Taylor in Fl. Hibern. pt.* 2. 55. J. epiphylla, var. β. longifolia, *and* var. γ. furcigera. *Hooker Brit. Jung. t.* 47.

THE writer of this article was formerly sceptical concerning the claims of this species, and has thus been induced to subject it to very rigorous investigation, for which he has enjoyed excellent opportunities; the plant growing in great luxuriance and perfection near Frodsham in Cheshire, whence the specimens figured were obtained in March last. He has obtained permission from the discoverer, Dr. Taylor of Dunkerron, to describe it for this work, with the hope of more readily dispelling similar doubts elsewhere.

Considerable resemblance exists between this species and *J. epiphylla*; so much so, that a detailed description is considered unnecessary. The points of difference will be chiefly discussed here. *J. calycina* differs in the shape of the frond, which is much narrower, more elongated, with

more numerous subdivisions (in the anther-bearing fronds quite linear), the margins more flexible, wavy, and sometimes crisped; the midrib better defined at the edges; the colour of the mature fronds a darker green, destitute of the brownish purple tinge on the midrib observable in *J. epiphylla*. The annual buds, produced soon after winter, are also very different in their linear shape, and also (as it would seem) in their lateral position. This species appears to be truly diœcious; but the anthers are immersed in the frond above the midrib, exactly as in the other species. The oblong shape of the seeds or sporules is remarkable, especially in an early stage, when they are clustered four together; and the spiral filaments are not tortuous and crooked like those of *J. epiphylla*.

The large ventricose calyx, and the short, included and concealed corolla, are constant and essential characters. In an early stage the pistilla are mounted on a very prominent receptacle, and there are sometimes two, and even three capsules produced from one calyx. In this species (as also in *J. epiphylla*) the base of the peduncle is surrounded by a vaginula, the relative situation of which, within the calyptra, is quite different from that of the *Musci*. Some monstrous states of the fruit were observed, in which processes resembling the peduncle were seen to grow out from the side or summit of the capsule.—W. W.



Dec.r 1st 1843

2874.

JUNGERMANNIA Ralfsii.

Ralfs's Jungermannia.

CRYPTOGAMIA Hepaticæ.

"GEN. CHAR. *Common receptacle* of the fruit none. *Perianth* or *Calyx* monophyllous, tubular (rarely absent). *Capsule* 4-valved, terminating a peduncle which is longer than the perianth.

SPEC. CHAR. Frond procumbent, broadly obovate, forked, lamellated, the midrib prominent beneath. Fruit from the upper surface of the frond. Calyx funnel-shaped, very broad, toothed. Calyptra shorter than the calyx. Capsule spherical, bursting irregularly. Seeds reticulated.

SYN. Diplolæna Lyellii, *Nees von. Esenb. v.* 3. 352.

AT the time when the writer of this article described *J. hibernica, t.* 2750, the species here given was unknown to him, though he had gathered it in a barren state, growing in company with *J. hibernica.* With that species it has therefore been confounded, and the remarks as to the obovate lamellated fronds, together with *f.* 16 on that plate, must be referred to this place. Mr. Ralfs was so fortunate as to find the plant in fruit at Hoyle Sands, near Penzance, in April last; and, as a just tribute to his perseverance and acuteness, we have named the species after him. Mr. Curnow of Penzance has kindly supplied us with recent specimens from the same place.

The fronds are diœcious, growing close to the ground, with spreading, obovate, forked divisions, sometimes simply obovate, flattish, beset on the upper side with erect lamel-

lar processes, disposed in radii towards the extremity of the frond, which is somewhat emarginate. In the Aberffraw specimens the lamellæ are much broader and more crowded than they are shown in our figure. The colour is light green, and the texture rather flaccid, except the thick midrib, which is often lengthened out at the base of the frond, and denuded so as to resemble a stipes. As in *J. hibernica*, the midrib is covered underneath with numerous simply fibrous roots. Anthers yellowish, sessile, clustered together between the crowded and interlaced lamellæ upon the midrib. Sometimes these lamellæ assume the appearance of toothed scales, resembling those of *J. hibernica*, but not different in colour from the rest of the frond. Calyx widened at the mouth, very broad in proportion to its length, in an early stage especially, strongly toothed, and the sides ribbed or lamellated. Calyptra concealed within the calyx. Capsule round, rather large, olive-brown, on a peduncle from one to two inches long, irregularly opening into several divisions, with some obscure traces of the valvular dehiscence proper to the genus; the texture tessellated. Seeds or sporules round, brown, somewhat angular, rather large, the dark nucleus surrounded by a transparent, beautifully reticulated membrane; in an early stage clustered four together. Spiral filaments composed of a double or triple helix in a membranous, pellucid tube, very often forked, as shown in our figure.

J. Ralfsii is distinguished from *J. hibernica* by its pale green colour, lamellated fronds, spherical capsule and reticulated seeds. A remarkable difference also exists in the structure of the spiral filaments. The areolæ of the frond are larger.—W. W.

Dec.r 1st 1843.

2875.

SCROPHULARIA Ehrharti.

Ehrhart's Betony.

DIDYNAMIA Angiospermia.

GEN. CHAR. *Calyx* 5-lobed or 5-cleft. *Corolla* subglobose; limb small, with 2 lips; upper one 2-lobed and often with a scale-like abortive stamen within; lower 3-lobed. *Capsule* 2-celled and 2-valved, the margins of the cells turned inwards.

SPEC. CHAR. Leaves ovate-lanceolate, acute, subcordate below, glabrous, serrated, the lower serratures smaller. Stem and petioles winged. Cymes lax, few- (4–8) flowered. Sepals roundish, with a broad membranous margin. Staminodium bifid with diverging lobes.

SYN. Scrophularia Ehrharti. *Stevens in Ann. Nat. Hist. v.* 5. 3. *t.* 1. *Trans. Bot. Soc. Edin. v.* 1. 57. *Leight. Fl. Shrop.* 301. *Bab. Man. Brit. Bot.* 218.

S. aquatica. *Ehrh. Pl. Off.* 156. *Fl. Dan. t.* 507. *Koch Syn. Fl. Germ.* 515. *Reich. Fl. Excurs.* 377. *Sturm Deutsch. Fl. No.* 23. *Kunth Fl. Berol v.* 2. 60.

THE Rev. C. A. Stevens has given so clear a statement of the reasons for considering this plant as distinct from *S. aquatica* (*t.* 854), and also proved so completely that, contrary to the opinion of most of the continental botanists, that is the true plant of Linnæus, as to call for little more than a mere description of the present species in this place. We

cannot however allow the plate to be published without expressing our entire concurrence with Mr. Stevens's conclusions.

Root fibrous. Stems erect, 2 to 4 feet high, square, with broadish wings at the angles. Leaves ovate or ovate-lanceolate, slightly cordate at the base, acute, serrated. Panicle of numerous alternate, lax, dichotomous, few-flowered cymes. Peduncles and pedicels divaricated, and slightly glandular. Bracteas leaf-like, lanceolate, serrate, acute. Sepals broad, rounded, with a broad, slightly torn, membranous margin. Corolla dark lurid purple. Staminodium bilobed, the lobes diverging. Capsules subglobose, obtuse.

This plant has been noticed in but few places in Britain; viz. near Preston in Lancashire, whence it was first communicated to Mr. Sowerby by Mr. Gilbertson in 1836, with the name of *tortuosa* given it by Mr. W. Helme; at Berwick-upon-Tweed, by Dr. P. Maclagan; Wilmingdon, Sussex, by Mr. Jenner; near Cramond Bridge, West Lothian; and Belsize Park, Middlesex; at the latter place Mr. Sowerby gathered the specimen figured, on the 24th of August, 1841.

S. aquatica, *Linn.* (*Engl. Bot. t.* 854), which is *S. Balbisii* of Hornemann, Koch, &c., is distinguished from this by its rounded-obtuse crenate-serrate leaves, dense many-flowered cymes, linear obtuse bracteas, roundish-reniform entire staminodium, and pointed capsules.—C. C. B.

Febr 1st 1844.

2876.

FUMARIA micrantha.

Small-flowered Fumitory.

DIADELPHIA Hexandria.

GEN. CHAR. *Calyx* of 2 sepals. *Petals* 4, the upper one spurred at the base. *Stamens* in two bundles of 3 each. Fruit indehiscent, 1-seeded.

SPEC. CHAR. Sepals orbicular, dentate, broader than and half as long as the corolla. Fruit globose, slightly pointed. Bracteas as long as the fruit-stalks.

SYN. Fumaria micrantha. "*Lag. Cat. Hort. Mad.* 21." *DeCand. Syst. v.* 2. 137. *Arn. in Rep. Bot. Soc. Edin. No.* 3. 107. *Hook. Icon. Plant. t.* 353. *Br. Fl. ed.* 5. 14. *Bab. Man. Br. Bot.* 14. *Ann. Nat. Hist. v.* 11. 258.

F. calycina. *Bab. in Trans. Bot. Soc. Edin. v.* 1. 34. *Walp. Repert. Bot. System. v.* 1. 122.

IT being now determined with certainty that this is the plant intended by La Gasca, his name is of course adopted here.

Root annual. Stems erect or spreading, angular, striated, branched. Leaves three or four times divided into numerous short, nearly linear segments, which are slightly broader towards their tips, and have a minute point. The petioles are curved but not twisted. Spikes nearly sessile, densely flowered, at first shorter than the adjoining leaf, afterwards rather longer; but ultimately, although lengthened considerably as the fruit ripens, much shorter than the full-grown leaf. Flowers small, upon short peduncles, pale purple with the tip

darker; sepals nearly orbicular, denticulate, nearly half as long as the corolla and exceeding it in breadth. Fruit globose, slightly compressed, with a small point. Bracteas longer than the peduncles of both the flowers and fruit.

It is probable that this beautiful species of Fumitory is not uncommon in Britain; it has been found near Edinburgh, (where the specimen figured was gathered on Sept. 2, 1841,) North Berwick, Perth, Airly and Kimblethmont in Scotland; near Dover, and near Shrewsbury; also about Croydon, Guildford, and elsewhere in the chalk district of Surrey. It flowers during the whole summer.—C. C. B.

Publ.d 1st 1844

2877.

FUMARIA Vaillantii.

Vaillant's Fumitory.

DIADELPHIA Hexandria.

GEN. CHAR. *Calyx* of 2 sepals. *Petals* 4, the upper one spurred at the base. *Stamens* in two bundles of 3 each. *Fruit* indehiscent, 1 seeded.

SPEC. CHAR. Sepals very minute, narrower than the pedicel, and many times shorter than the corolla. Fruit globose, compressed, scarcely pointed. Bracteas about as long as the fruit-stalks.

SYN. Fumaria Vaillantii. *Loisel. Not.* 102. *Fl. Gall. ed.* 2. *v.* 2. 101. *DeCand. Syst. v.* 2. 137. *Koch Syn. Fl. Germ. ed.* 2. 35. *Reich. Icon. Fl. Germ. f.* 4452. *Bab. Trans. Bot. Soc. Edin. v.* 1. 36. *Man. Br. Bot.* 14.

F. parviflora. *Sven. Bot. t.* 574. *Arn. in Hook. Br. Fl. ed.* 4. 266.

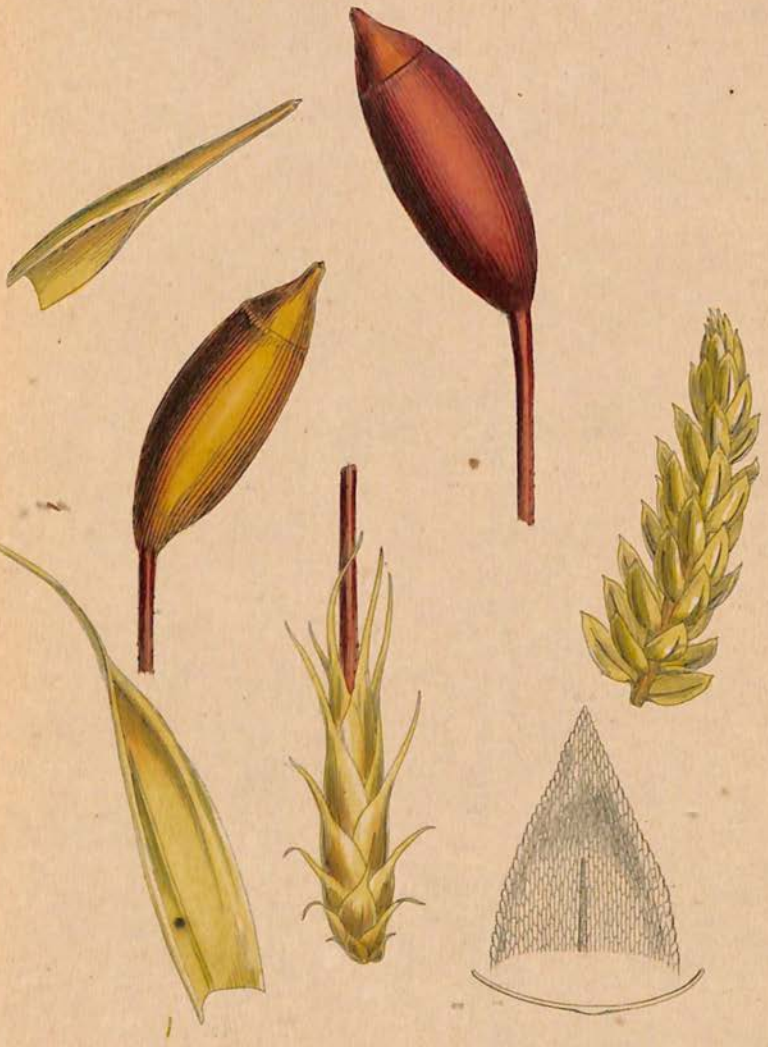
Fumaria lobis longioribus et angustioribus sparsis. *Vaill. Bot. Par. t.* 10. *f.* 6.

AS far as it is possible to determine without access to authentic specimens, I am convinced that the above synonyms belong to the present plant; but much difficulty is caused by several of those authors, even the original describer himself, having neglected to inform us of the size of the sepals in their plants, although they have been very careful to state the colour of the flowers, which does not at all contribute to the determination of the species. Mr. Arnott appears to consider our plant as the *F. parviflora* of Lamarck; and in a paper read before the Botanical Society of Edinburgh, he has given what I consider two forms of the present plant as *F. parviflora* and

F. Vaillantii, the white-flowered plant for the former, and that with rose-coloured flowers for the latter, stating that they are both furnished with minute sepals. It appears to me that the leaves of our plant agree better with the "laciniis linearibus" of Loiseleur's *F. Vaillantii* than with the "laciniis filiformibus" of his *F. parviflora*. Koch says of the same plants, "fol. laciniis sublinearibus" and "fol. laciniis linearibus," and also states that the sepals of *F. parviflora* are "corolla sexies brevioribus latitudine eandem æquantibus." Reichenbach says of the former, "foliolis elongato-lineari-lanceolatis," and of the latter, "foliolis angustissime linearibus," and figures its sepals as being fully as broad as the corolla. Again, all these authors consider the fruit of *F. Vaillantii* to be slightly pointed, but less so than that of *F. parviflora*. In Vaillant's figure, which is the original authority for the plant named after him, the leaflets are represented as broader than those of the true *F. parviflora*. Reichenbach has published specimens of both these plants in his *Fl. Exsic.*, No. 1282, being his *F. parviflora*, and No. 296, his *F. Vaillantii*; the latter is exactly our plant with rose-coloured flowers, and the former is a plant that I have never seen in Britain, although it is probably represented in *Engl. Bot. t.* 590. A specimen from Smyrna, distributed as *F. Vaillantii* by the *Unio Itineraria*, is our plant with white flowers.

Root small. Stems slender, erect or spreading, angular, furrowed, branched. Leaves glaucous, 3 or 4 times divided into numerous slender, broadly linear acute segments. Spikes small, nearly sessile, rather lax, elongating slightly after the flowers have fallen. Flowers small, white with a purple tip, or rose-coloured with the tip darker, upon short peduncles, which are usually much shorter in the white than in the red flowered plant. Sepals very minute, often considerably narrower than even the peduncle, and many times shorter than the corolla, rhomboidal, cut in the upper half. Fruit globose, rather compressed, with a slight point, its peduncle about as long as the bractea in the white-flowered plant, considerably longer in that with red flowers.

The specimens figured were gathered amongst corn on the Gogmagog Hills, Cambridgeshire, in June 1841.—C. C. B.



Febr 1st 1844.

2878.

HYPNUM cæspitosum.

Tufted Feather Moss.

CRYPTOGAMIA Musci.

GEN. CHAR. *Fruit-stalks* lateral. *Peristome* double: outer one of 16 teeth; inner, a membrane cut into 16 equal segments, and usually with intermediate filiform processes. *Calyptra* dimidiate.

SPEC. CHAR. Stems creeping, with short, simple, incurved branches. Leaves ovate, concave, spreading, secund, serrulate, with plane margins, nerved above half way. Fruit-stalks rough. Capsule erect, oblong. Lid conical, subrostrate.

THIS new species was gathered in Nov. 1836 at Longford, near Warrington, where both previously and since it has been observed, growing abundantly in fruit, and in extensive patches upon walls built of sandstone, in places where it is exposed to inundation, in company with *H. rutabulum*. It occurs also about the roots of trees in the same neighbourhood, and in a few similar situations elsewhere about Warrington, but mostly in a barren state. More recently this moss has been observed near Frodsham in Cheshire, in places not exposed to inundation. It has been carefully observed for several years, and found to be constant in the above characters. It is therefore now, with Dr. Taylor's concurrence, proposed as a new species. It differs from *Hypnum rutabulum* in its secund, glossy, patent and more rigid foliage, which is by no means acuminated, but rather obtuse, and when dry exhibits no appearance of striæ. When growing it much resembles *H. blandum*, (*H. illecebrum*, *Schwægr. Suppl. v.* i. *P.* 2. 225,) and, as in that species, the branches are incurved. It differs from both in the much more erect capsules, which are of a more oblong shape. In the Frodsham specimens the capsule is more elongated and slightly curved, and the lid has a short inclined beak.—W. W.

Feb.y 1st 1844.

2879.

CONFERVA Brownii.

Brown's Conferva.

CRYPTOGAMIA Algæ.

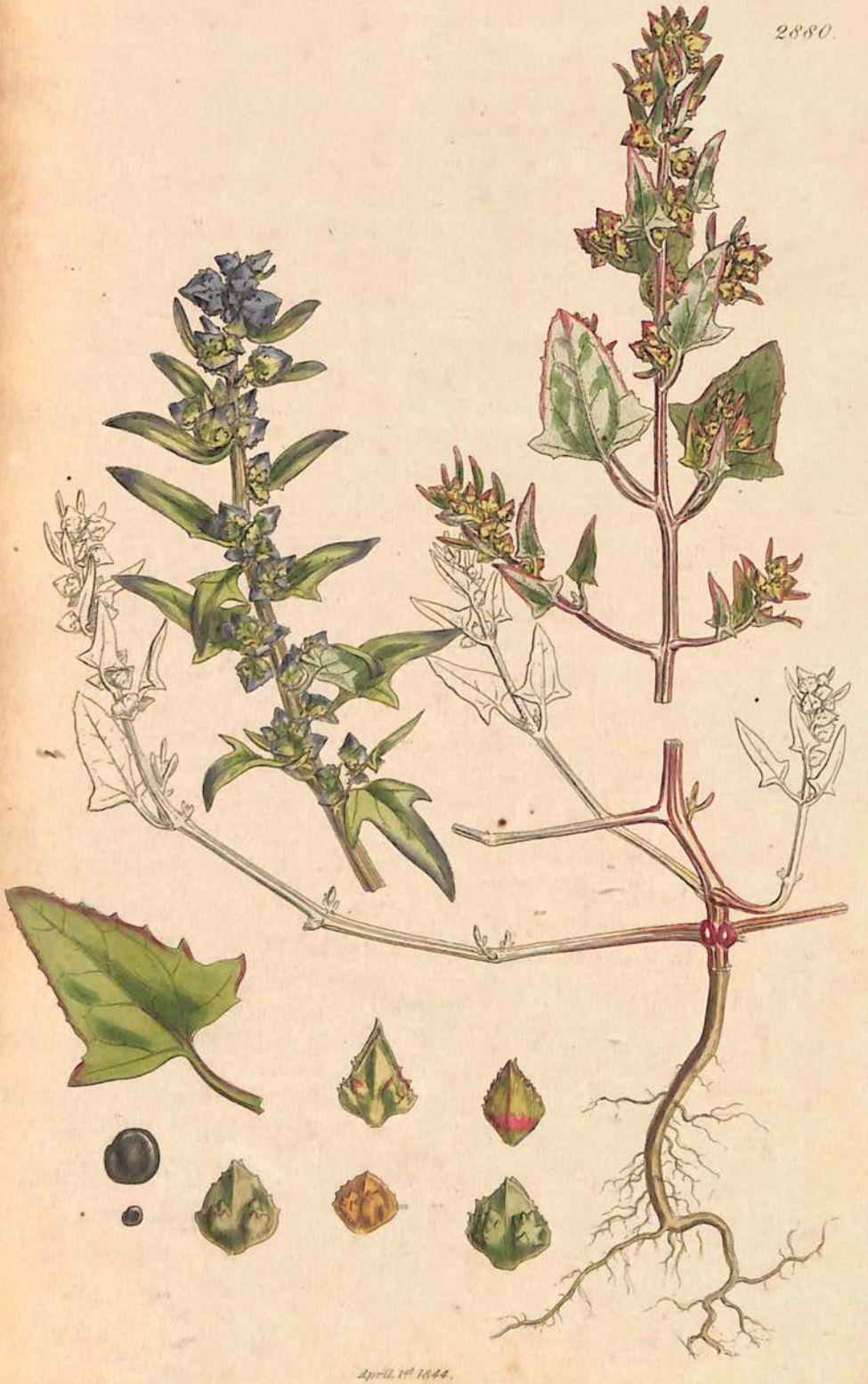
GEN. CHAR. *Filaments* simple or branched, free, not connected by transverse tubes; *articulations* containing a granular mass.

SPEC. CHAR. Filaments forming dense cushion-like tufts, erect, rigid, flexuous, elastic, branched; branches long, subsimple, subsecund; axils acute; articulations 3–7 times longer than broad, the lower ones thickened upwards, the upper cylindrical.

SYN. Conferva Brownii. *Dillw. Conf. Syn.* 58. *supp. t. D. Agardh Syst. Alg.* 105. *Engl. Fl. v.* 5. *pt.* 2. 355. *Wyatt Alg. Danm. no.* 225. *Harv. Man. Brit. Alg.* 134.

FIRST discovered by Mr. R. Brown, in a cave near Dunrea, in the north of Ireland. It has since occurred near Black Castle, Wicklow; and Mr. Ralfs, from whom we received our specimens, has found it on the Cornwall coast, where it is in perfection in winter. It forms very dense, rigid, dark green tufts, in caves where it is exposed to the dripping of fresh water and the occasional overflow of the sea. Filaments springing from a creeping fibrous base, erect, about one inch high, though sometimes much shorter; rigid and elastic, slightly branched alternately, many of the subdivisions being secund, or, if not springing from the same side of the filaments, leaning one way. Articulations variable in length, 3–7 times as long as broad, swelling upwards; those which are terminal being nearly cylindrical.

Compared by Mr. Harvey to *Conferva ægagropila.* The peculiar rigid character quite disappears when the plant is dry, and the colour, which, in the spongy mass saturated with water, is dark green, becomes far paler.—M. J. B.



April 1st 1844.

2880.

ATRIPLEX rosea.

Rose-coloured Orache.

POLYGAMIA Monœcia.

GEN. CHAR. *Sterile flowers: Perianth* 5-partite, inferior. *Stamens* 5. *Fertile flowers: Perigone* of 2 more or less connected valves. *Stigmas* 2. *Pericarp* membranaceous, free. *Seed* vertical; its hylum lateral or almost basal; testa crustaceous; radicle inferior, ascending.

SPEC. CHAR. Stems spreading, procumbent or ascending, with spreading branches. Leaves mealy, ovate-triangular, somewhat 3-lobed, unequally sinuate-dentate; the upper ones lanceolate-dentate, and 3-lobed at the base, or nearly entire. Enlarged calyces rhomboidal, acute, toothed, with 2 irregular rows of tubercles on the back. Clusters axillary and terminal, few-flowered. Seeds minutely tubercular-rugose.

SYN. Atriplex rosea. *Linn. Sp. Pl.* 1493. *DeCand. Bot. Gall.* 398. *Ledeb. Fl. Alt. v.* 4. 314. *Koch. Syn. Fl. Ger.* 611. *Sturm. Deuts. Fl. pt.* 80. 3. *Bab. Prim. Fl. Sarn.* 84. *Trans. Bot. Soc. Edin. v.* 1. 13. *t.* 2. *Man. Br. Bot.* 253.

A. alba. *Reich. Fl. Excurs.* 578.

A. patula β. *Sm. Fl. Br. v.* 3. 1092.

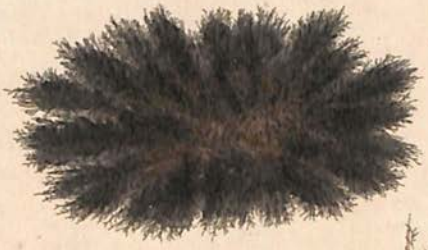
IT is probable that this plant has been usually confounded with *A. patula* by English botanists; and when we consider the great difficulty attending the determination of species in this genus, caused chiefly by the very variable forms of most

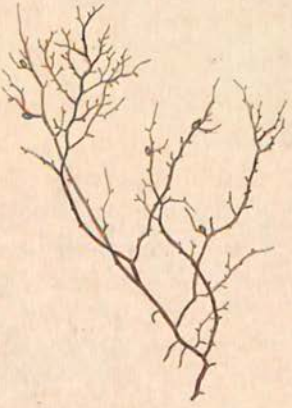
of them, and also the unattractive character of the plant themselves, we cannot wonder that several British plants have so long remained undetermined.

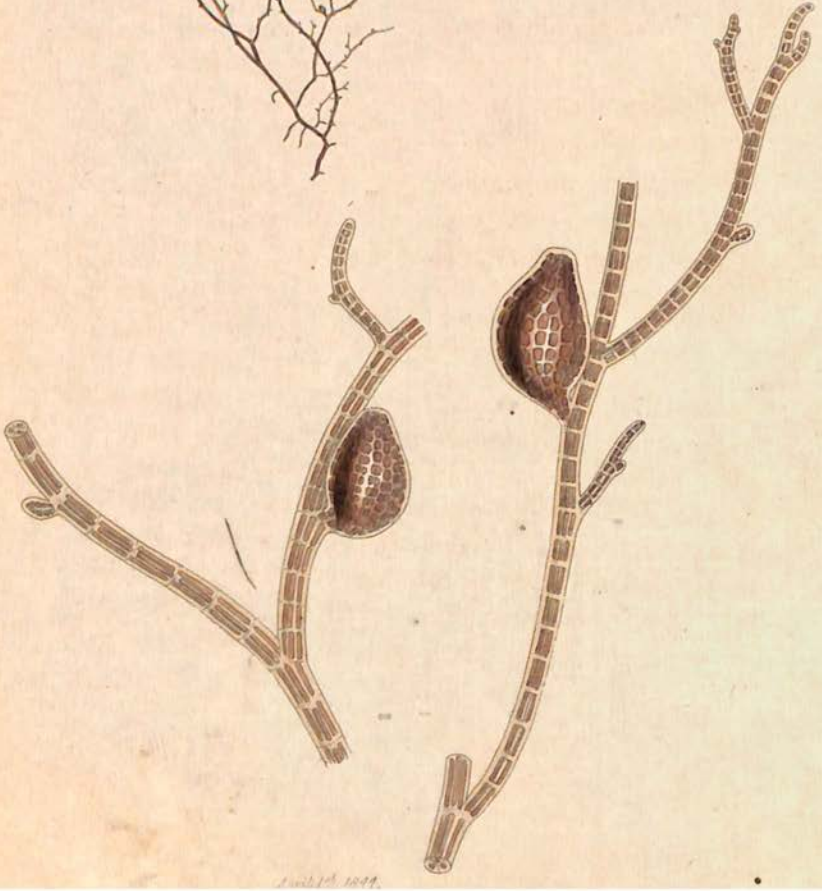
This plant appears to be by far the most variable species of the genus, presenting a quite different appearance when growing upon damp muddy shores, from its usual state as an inhabitant of a sandy and shingly beach; but the careful study of very numerous living specimens has convinced us that these different forms are only states of one species, and that although the formation of a specific character which shall, at the same time, include all their variations, and distinguish the species from its near allies, is a point of very considerable difficulty, still it is our firm opinion that *A. rosea* is specifically different from *A. patula*, *prostrata* and *laciniata*, the three plants with which it is most likely to be confounded. From the two former of these, its scattered axillary flowers and the form of its leaves and calyces will be found to be sufficient to distinguish it, and from *A. laciniata* the two latter characters completely separate it.

Stems procumbent or ascending, square, striated; usually slender, sometimes thick and fleshy, often beautifully tinged with reddish purple, clothed with whitish meal in common with the flowers and leaves. Leaves ovate-triangular, with two prominent horizontal lobes at the base, which are larger in proportion to the leaf than is usual in this genus, irregularly sinuate-dentate, very white and mealy on the under side; the upper leaves similar in general character, but the lobes smaller in proportion, and the leaf lanceolate; the uppermost of all sometimes nearly or even quite entire. Flowers in small distinct, mostly axillary, clusters. Calyx of the fruit large, irregularly rhomboidal, acute, toothed in the upper part, with two more or less regular lines of tubercles on the back, sometimes nearly smooth; their outline varies greatly even upon the same plant, but there is always a peculiar character about them which is more easily seen than described. Seeds large, minutely tubercular-rugose, tinged with red.

Common upon the sea-coast throughout Britain. The specimens figured were gathered at Granton, near Edinburgh, on the 2nd September 1841.—C. C. B.







2881.

POLYSIPHONIA pulvinata.

Cushion-like Polysiphonia.

CRYPTOGAMIA Algæ.

GEN. CHAR. *Frond* longitudinally striate with internal parallel tubes, bearing ovate capsules and granules in distorted ramuli.

SPEC. CHAR. Filaments rising from a mass of creeping fibres, tufted and interwoven, short, very slender, flexuous, sparingly and irregularly dichotomous, more or less furnished with very patent or recurved simple ramuli; articulations variable in length, bistriated containing 3 or 4 tubes; capsules pitcher-shaped, very large, scattered.—*Harv.*

SYN. Polysiphonia pulvinata, *Areschoug. Alg. Scand. Exs. no.* 60. *Harv. Brit. Alg. p.* 94.

Polysiphonia macrocarpa. *Harv. in Fl. Hib. pt.* 3. 206. *Wyatt Alg. Danm. no.* 215.

Hutchinsia pulvinata. *Ag. Sp. Alg. v.* 2. 109. *Duby Bot. Gal.* 1020.

Conferva pulvinata. *Roth Cat. Bot. v.* 1. 187. *t.* 3. 4. (*in textu* 5.)

GROWING in dense, cushion-like, intricate, purple-brown masses, about an inch high, attached by creeping and rooting filaments to stones, shells, &c. Rootlets often jointless, and without striæ, attached by a little disc. Threads very slender, irregularly branched, more or less flexuous, consisting of joints a little longer than broad, containing three tubes; ultimate ramuli more or less curved, adhering slightly when dry. Capsules large, lateral, urceolate, reticulate with

pellucid cells containing a nucleus of the same form, exactly as in *Porphyra*.

Found at Port Stuart by Mr. D. Moore; at Miltown, Malbay, by Mr. Harvey, and on the Devonshire and Cornish coasts by Mrs. Griffiths and J. Ralfs, Esq., from the latter of whom we received our specimens. The numbers in Roth's plate do not agree with those indicated in the text. *Grammita ascendens*, referred by Desmazières, no. 1216, to *Hutchinsia pulvinata*, Ag., is a very different species, whose joints contain about 12 tubes. In Areschoug's plant I find 4 tubes in each articulation. In British specimens the number of tubes appears to be three.—M. J. B.

2882.

POLYSIPHONIA thuyoides.

Thuja-like Polysiphonia.

CRYPTOGAMIA Algæ.

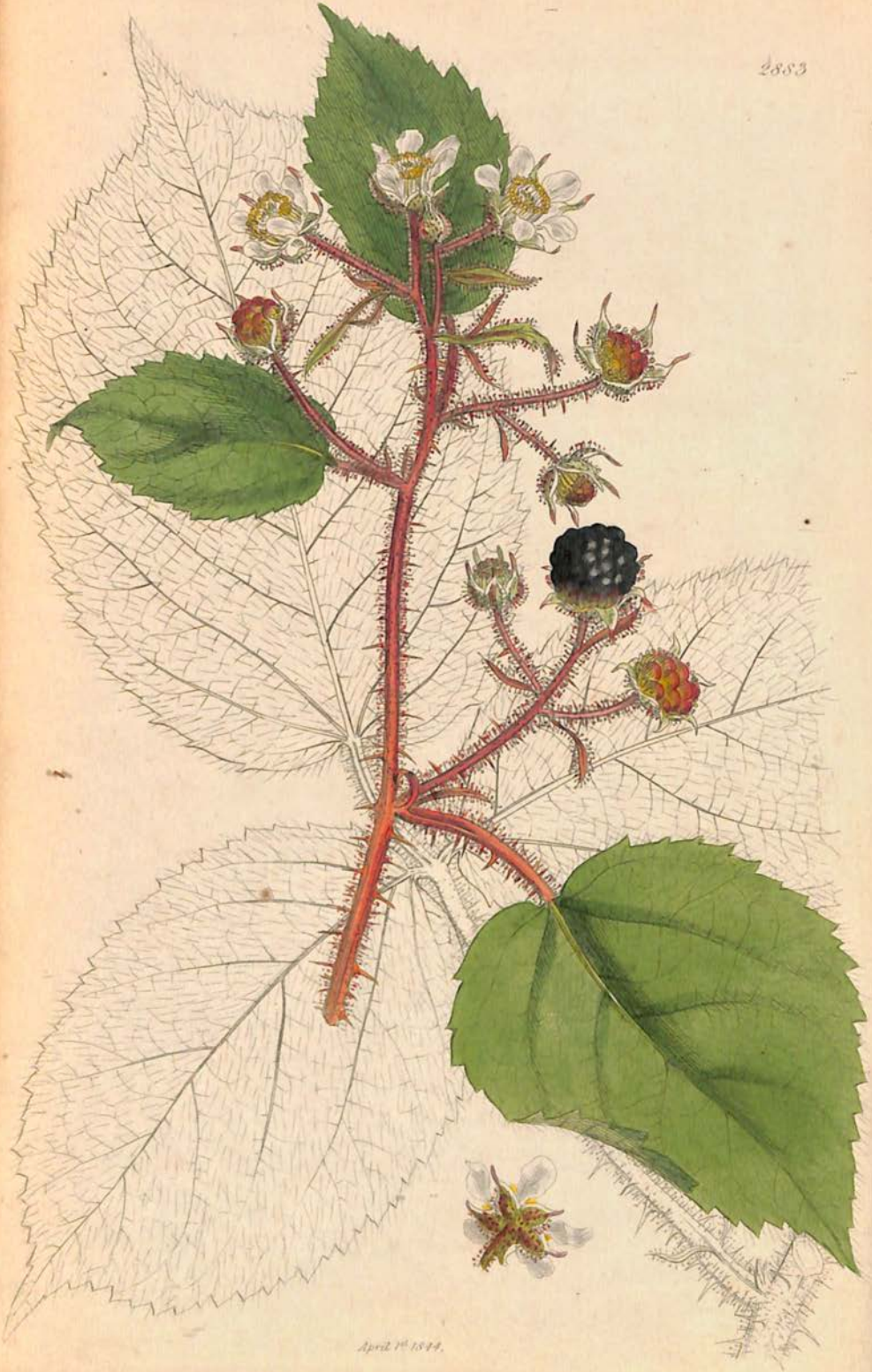
GEN. CHAR. *Frond* longitudinally striate with internal parallel tubes, bearing ovate capsules, and granules in distorted ramuli.

SPEC. CHAR. Stems erect, rising from creeping fibres, terete; below simple and set with short spine-like ramuli; above much branched; branches crowded, very erect, bipinnate; pinnæ pinnato-multifid; axils rounded; ramuli marked at short distances with transverse striæ as if jointed; veins reticulated.—*Haw.*

SYN. Polysiphonia thuyoides. *Harv. in Fl. Hib. pt. 3.* 205. *Man. Brit. Alg.* 86. *Wyatt Alg. Danm. no.* 305.

ON rocks attached to corallines, &c., growing in dull brown or yellowish tufts, 2–3 inches long. Threads rather thick, rigid, rising from a creeping base, naked below or furnished with a few bristly branchlets, divided into a greater or less number of erect branches above, which are clothed with pinnate ramuli, which are themselves more or less regularly pinnate, with the tips of the pinnules sometimes bifid or more rarely trifid. Ultimate ramuli incurved. Articulations faintly marked, especially in the lower portions of the plant, or filled with numerous more or less anastomosing tubes. Granules quaternate in the swollen ultimate ramuli. Capsules rare, ovate. 'Antheridia bright yellow, gelatinous, produced in summer,' when the ultimate ramuli are terminated by long pellucid threads.

This species, of which we have received specimens from Mr. Ralfs, appears to be not uncommon. It has the habit of *P. nigrescens*, and is allied to *Polysiphonia fruticulosa*, but is very distinct. We are not aware that it has been described by any foreign author. The capsules, which are very rare, we have received from Mrs. Griffiths.—M. J. B.



April 1st 1844.

2883.

RUBUS glandulosus.

Bellardi's Bramble.

ICOSANDRIA Polygynia.

GEN. CHAR. *Calyx* 5-cleft. *Petals* 5. *Berry* superior, of several single-seeded juicy *grains*, placed upon a protuberant spongy *receptacle*.

SPEC. CHAR. Stem declinate-procumbent, round, glaucous, with numerous gland-tipped setæ, and small, unequal, mostly acicular prickles. Leaves ternate; leaflets ovate, cuspidate, hairy on both sides, green beneath, all stalked. Panicle but little divided, hairy, setose and prickly. Calyx clasping the fruit; at length reflexed.

SYN. Rubus glandulosus. *Bellardi Fl. Pedem. App. in Mem. Acad. Turin. v.* 5. 230. *Willd. Enum.* 548. *DeC. Fl. Fr. v.* 4. 474. *Fries Nov. Suec. Mant. alt.* 36. *Arrhen. Mon. Rub. Suec.* 40.

R. Bellardi. *Weihe & Nees Rubi Germ.* 97. *t.* 44. *Mert. & Koch Deut. Fl. v.* 3. 509. *Bluff. & Fing. Comp. Fl. Germ. ed.* 1. *v.* 1. 688. *Lej. & Court. Fl. Belg. v.* 2. 173. *Wim. & Grab. Fl. Siles. pt* 2. *v.* 1. 41.

R. hybridus. *Wallr. Sched. Crit. v.* 1. 229. *Gaud. Fl. Helv. v.* 3. 365.

(Excluding, wherever they occur as synonyms, *R. hybridus* Villars, *R. villosus* Ait., and *R. hirtus* Wald. & Kit.)

A REMARKABLE and beautiful Bramble, "antiquissima et sanè nobilissima," says Fries, of the many species se-

parated from *Rubus fruticosus*. It is common apparently in various parts of Europe, and has lately been discovered in Sweden; but has been observed, as far as we are informed, in one spot only in the British Islands, in a plantation on Terrington Car, near Castle-Howard, Yorkshire, where it grows among rushes, on a moist peaty soil, covering about a rood of ground, almost to the exclusion of every other Bramble. It was discovered, in July 1841, by Mr. Richard Spruce, in whose company our specimens were gathered in September 1843, when but few panicles remained in flower, and of whose notes, kindly communicated, we have availed ourselves.

Barren stems usually arising several from the same root and diverging in all directions, growing to the length of from 7 to 12 feet, occasionally rather more, but scarcely attaining to half an inch in diameter; they are pithy, round, somewhat flexuose, arched for about half their length, then prostrate, rooting at the extremity; they throw out a few horizontal branches near the base: fertile stem suberect, seldom more than 18 inches high, branched nearly at right angles. The stems are glaucous, very red on the exposed, pale green on the sheltered side, densely beset with gland-tipped setæ, intermixed with numerous horizontal and decurved prickles, very unequal in size, but none of them large, mostly acicular, or but slightly enlarged at the base, others more dilated and flattened, but scarcely longer*, and among them a few soft hairs. Leaves ternate; the upper ones among the flowers often simple. Common leaf-stalk shorter than the terminal leaflet, armed and coloured like the stem, the upper side more hairy, flattened, but not channeled except at the very base and above the setting-off of the short ascending proper stalks of the lateral leaflets†. Stipules long, linear, fringed, issuing at some distance above the base of the leaf-stalk. Leaflets large (except in the lower leaves of the branches), firm, unpolished, of a yellowish green, often much tinged with red, rather paler beneath; both surfaces sprinkled with shining

* "Figura a Weiheo data eatenus mendosa, quod aculei majores in caule sterili fere nulli conspiciuntur." *Fl. Siles. l. c.*—In fact they vary much in abundance, and on some of our specimens are almost wanting.

† Bellardi describes the lateral leaflets as sessile. We have not seen them so.

hairs, those on the under side shorter, and confined to the prominent ribs and veins; outline broadly ovate*, cuspidate, often very abruptly so; serratures variable†, not deep, blunt, with a sharp ascending or horizontal point: the middle leaflet has occasionally a subcordate base; the lateral ones are unequal-sided, the portion below the midrib being at least a third wider than that above it; one of the lower nerves on this side stronger and more branched than the rest, and beset beneath with a few small prickles, such as occur more plentifully on the midrib‡: upper leaves when simple, truly cordate, and furnished with a similar stronger nerve or rib on each side; the uppermost have usually a few stalked glands on the upper surface. Panicle not large, hairy, beset with abundance of acicular prickles and gland-tipped setæ; its branches alternate, horizontal, few-flowered, shorter than the subtending leaves; terminal flower-stalk shorter than the next below it: under the upper branches and branchlets the place of leaves is supplied by more or less dilated or linear, trifid or simple bracteas, fringed with setæ and hairs. Calyx tomentose, setose and prickly, spreading or decurved when in flower, closing about the young and ripening fruit, and again deflexed when this is fully ripe; segments subtriangular, with a lengthened simple point. Petals scarcely longer than the calyx§, obovate or narrowly spatulate, crumpled, and, like the stamina, greenish white. Fruit of moderate size, rather loosely grained, shining, black, with a tinge of red; its taste acidulous, with a slight turpentine flavour.

So variously has the name *glandulosus* been applied, that it might be convenient to follow the example of those who distinguish this, the plant originally called so, by another name; but we yield to the paramount claim of priority. De Candolle, indeed, Wallroth, Gaudin, and Koch (*Syn. Fl. Germ.*), regard it as *R fruticosus* β. *hybridus* of Villars; but the short

* "Quæ nunc in ovato-subrotundam, nunc in anguste oblongam, mutatur." *Fl. Siles. l. c.*

† "Duplicato-serrata." *Gaudin.* "Simpliciter et irregulariter serrata." *Wallroth.* We find them for the most part almost regular and simple.

‡ The usual structure in ternate leaves of Brambles, indicating a tendency to the ordinary pedate-quinate arrangement.

§ "Petala ovato-oblonga." "Floribus magnis, speciosis." *Fl. Siles. l. c.* Every other part of that full and excellent description agrees with our plant.

account in *Hist. des Pl. de Dauphiné* does not well agree. In *Rubi Germanici* Villars's plant is referred to *R. Güntheri* of that work, which Arrhenius confidently assumes to be but a var. of *R. glandulosus*. Persoon (*Synops.*) guesses Villars's plant and Bellardi's to be the same, identical with *R. hirtus* Wald. and Kit., and no more than a var. of *R. corylifolius* Sm. Duby (*Bot. Gall.*) unites *R. glutinosus* and *R. hirtus*. Seringe (in *DeC. Prod.*) joins the two with *R. hybridus* as one form of *R. villosus* Aiton: and Gaudin, apparently on his authority, gives the four names as synonymous. Bertoloni (*Fl. Ital.*) adds to these four *R. Köhleri*. Reichenbach (*Fl. Excurs.*) maintains that *R. glandulosus* W. & N. is *R. hirtus* Wald. and Kit., and *R. hirtus* W. & N. the true *R. glandulosus* of Bellardi; a notion combated by Arrhenius, who has compared our *R. glandulosus* with an authentic specimen of the Hungarian *R. hirtus*, and has most accurately described it in his admirable Monograph.

The round stems, the ternate and otherwise peculiar leaves, the dense covering of glands, the small prickles, and the whole habit of the plant, distinguish *R. glandulosus* from *R. Köhleri*. The two American species, *R. hispidus* Linn., which Bellardi suspected his plant might be, and *R. villosus* Aiton, are, it appears, quite different.

No 5-cleft leaves appear to have been seen on our plant (on the typical form of the species at least), in any country; yet it can hardly be supposed that such may not occasionally occur. The rare 5-leaved and 1-leaved vars. of Wallroth are both excluded in *Rubi Germanici*. DeCandolle's vars. in *Fl. Franç. Suppl.* are very questionable; and so is *R. glandulosus* of Loiseleur (*Fl. Gall.*).—W. B.

2884.

EPIPACTIS ovalis.

Oval lipped Helleborine.

GYNANDRIA Monandria.

GEN. CHAR. *Perianth* patent. *Lip* interrupted, the basal division concave, the terminal one larger with two projecting plaits at its base above. *Stigma* nearly square. *Rostellum* short, terminated by a globose appendage. *Anther* terminal, erect, sessile, free, 2-celled; cells without septa. *Pollen-masses* granular; granules in only a slight state of cohesion. *Column* short. *Germen* straight on a twisted stalk.

SPEC. CHAR. Leaves ovate-oblong, acute, the upper ones lanceolate, 1 or 2 lowest bracts longer than the flowers but shorter than the fruit. Terminal division of the lip transversely oval, acute, as long as the ovate-acute sepals and petals, its keel plicate-crenate above.

SYN. Epipactis ovalis. *Bab. Man. Br. Bot.* 295.
E. latifolia β. *Sm. Eng. Fl. v.* 4. 41.
Helleborine altera atro-rubente flore. *C. Bauh. Pin.* 186. *Raii Syn.* 383.

ROOT of several long fleshy fibres, which penetrate deeply amongst the stony rubbish which the plant inhabits. Stem six to eighteen inches in height, often much tinged with purple, clothed at the base with several rather close but funnel-shaped leafless sheaths. Leaves small, ovate, acute, longer

than the internodes. Bracts linear-lanceolate, the 2 or 3 lowest longer than the flowers, but nearly always shorter than the ripe fruit, all much smaller than the uppermost leaf. Flowers varying from dull yellow to blackish red, the petals usually paler. Peduncle shorter than the downy germen. Sepals and petals ovate, acute, equal in length, keeled at the back. Lip as long as the petals; its terminal division transversely oval, crenate, slightly notched in the middle with a small acute point in the notch, the middle of the upper surface occupied by a triangular, elevated, folded and tubercular-crenate space.

This beautiful plant inhabits the stony slopes of rubbish at the base of limestone cliffs on the mountains near Settle in Yorkshire, and was long since distinguished as a species by Ray. Its peculiar lip separates it from the allied plants, all of which have the terminal division decidedly triangular. Our specimens were gathered at the base of Giggleswick Scar near Settle, on the 22nd of July 1843, at which time the plant was in full flower.—C. C. B.

July 1st 1844.

2885.

CAREX Buxbaumii.

Buxbaumian Carex.

MONŒCIA Triandra.

GEN. CHAR. *Flowers* in imbricated spikes, each covered by a glume. *Barren flowers* without calyx or corolla. *Fertile flowers* with a single urceolate persistent perigone inclosing a nut. *Style* 1. *Stigmas* 2 or 3.

SPEC. CHAR. Spikes 3 or 4, oblong, sessile, contiguous; the lowest shortly stalked, rather distant; the terminal spike sterile at the base. Stigmas 3. Fruit oval, obtuse, compressed (ultimately trigonous), bidentate, subscabrous above; lower ones shorter than the cuspidate glumes. Nut obovate, trigonous, blunt, apiculate. Lower bract foliaceous.

SYN. Carex Buxbaumii. "*Wahl. Act. Holm.* 1803. 164." *Willd. Caric.* 48. *Spr. Fl. Hal. ed.* 2. *v.* 1. 406. *Schk. Car. pt.* 2. 45. *Hoppe Car. Germ. t.* b. 11. *Mack. Fl. Hibern. pt.* 1. 328. *Koch Syn. Fl. Germ.* 756. *Kunth Caric.* 432. *Bab. Man. Br. Bot.* 339.

C. canescens. "*Linn.*" *Boott in Hook. Br. Fl. ed.* 5. 425.

C. polygama. *Schk. Car. t.* X. & Gg. *no.* 76. *Spenn. Fl. Frib.* 53.

Cyperoides majus spicis brevibus, rotundis, spadiceo-viridibus. *Buxb. Pl. Min. Cogn. cent.* 4. 33. *t.* 59.

ROOT creeping. Stems solitary, leafy below, 1–2 feet high, triquetrous, the angles smooth below but rough in the

upper part; the pale brown sheaths at the base of the stem torn and reticulated at their edges. Leaves as tall as or taller than the stem, glaucous, flat, but folded at the midrib, smooth at the edges and keel except towards the end, where those parts are rough. Spikes 3 or 4, oblong, sessile, near together, the lower one often rather distant and shortly stalked, middle ones smallest, upper one barren at its base. Bracts rough at the edges and keel, without sheaths, the lowest often rising above the stem. Glumes lanceolate, cuspidate, brown, the nerve pale green, the lower glumes usually longer than the fruit. Fruit (*utriculus*) glaucous green tinged with brown, oval, compressed, or ultimately bluntly trigonous, obtuse, with two small, acute, prominent teeth at the mouth, and 5 or 7 rather obscure nerves upon each side. Nut obovate, trigonous, blunt, apiculate. Style single. Stigmas 3.

Discovered, in 1835, by D. Moore, Esq., on a small island in Lough Neagh near Toom Bridge, flowering in June. To that gentleman we are indebted for the specimens by the aid of which the plate has been prepared. Dr. Boott states that the original Lapland specimens of *C. canescens* belong to the present species, and that therefore that name ought to be retained; but as Wahlenberg's name is universally adopted, and various species have been denominated *C. canescens*, it has been thought better that this plant should still be called *C. Buxbaumii*.—C. C. B.

July 1st 1844.

2886.

ERIOPHORUM gracile.

Slender Cotton-Grass.

TRIANDRIA Monogynia.

GEN. CHAR. *Glumes* imbricated on all sides, nearly equal. *Style* deciduous. *Nut* triangular, surrounded by hairs much longer than the glume.

SPEC. CHAR. Spikes several. Culm slender, trigonal. Leaves triquetral, equilateral. Peduncles pubescent. Glumes many-nerved.

SYN. Eriophorum gracile. *Koch in Roth Cat. Bot. fasc. 2. app. Roth Supp. to Willd. in Konig Ann. of Bot. v. 1. 151.* Vahl. Enum. v. 2. 390. Pers. Syn. v. 1. 70. DeC. Fl. Fr. v. 3. 132. Wahl. Fl. Lapp. 19. Ejusd. Fl. Suec. 30. Poit. et Turp. Fl. Paris. t. 53. Mert. et Koch Deut. Fl. v. 1. 457. Gaud. Fl. Helv. v. 1. 132. Bluff et Fing. Comp. Fl. Germ. v. 1. 71. Lej. et Court. Comp. Fl. Belg. v. 1. 47. Wimm. et Grab. Fl. Siles. pt. 1. 41. Deitr. in Link. Sp. Pl. v. 2. 206. Ejusd. Fl. March. 90. Kunth Enum. v. 2. 179. Koch Syn. 746. Drej. Fl. Exc. Hafn. 19. Bab. Man. Brit. Bot. 334.*

E. triquetrum. *Hoppe Bot. Tasch. ann. 1800. Sturm Deut. Fl. v. 1. fasc. 10. Schrad. Fl. Germ. v. 1. 152. Host Gram. Austr. v. 4. 42. t. 74. Ejusd. Fl. Austr. v. 1. 63. Wallr. Annus Bot. 10. Fl. Dan. t. 1441. Reich. Fl. Exc. v. 1. 79. no. 552.*

(Excluding, everywhere, *Vaill. t. 16. f. 2.* and *E. gracile*, Sm.)

FOUND, for the first time in Britain, near Croft in York-

* From "*Neue Beitr. zur Bot. v. 1. p. 63.*"

shire, by Mr. Joseph Woods, in 1825. Our specimens were gathered, the old ones in August 1842, the younger late in June 1843, at Whitemoor Pond, Surrey, half-way between Guildford and the Woking station on the South Western Railway, where the plant abounds, but seems in imminent danger of destruction from the progress of draining and cultivation. It has a wide European range (witness our synonyms), but does not appear to be a common plant.

Plant spreading in the boggy soil by long jointed runners*, clothed with striated membranous tubular sheaths, and terminating each in a tuft of upright very slender leaves, of which the outer ones are merely rudimentary, the gradually lengthened points of the sheaths, and only three or four in the centre of the tuft, attain the full length, being about the height of the culm at the time of flowering, but scarcely reaching that of the full-grown seeding plant. They are acutely triangular, gradually flattened towards the blunt apex, smooth, except the minutely serrulate edges and keel. The three sides are nearly equal in width, but dissimilar, that opposite to the keel presenting a rounded groove, whilst one of the others is slightly concave, the third slightly convex. Culm solitary, slender, obtusely triangular†, about six inches high when in flower, ultimately thrice as high, smooth, obsoletely striated, with two or three joints, and as many leaves similar to those described, but the uppermost very short, with long, smooth, striated, scarcely inflated sheaths. The upper half of the culm, or thereabouts, naked; its base encompassed by a few discoloured last year's leaves, or more generally by their dead and broken remains with torn and widened sheaths. Spikes seldom more than four, ovate-elliptical, crowded whilst in flower, but pedunculate, except the terminal one, which, remaining sessile and erect, is overtopped by the lengthening and at last drooping stalks of the others, the lowermost becoming longest. These stalks, although not from the same point, are closely approximate‡,

* "Radix oblique adscendens, sine stolonibus horizontalibus." *Wahl. Fl. Lapp. l. c.* We cannot reconcile this. Authentic specimens prove his plant the same as ours.

† The clause in the original description in Roth's *Catalecta*, "Folia culmea ultra medium ancipitia," seems to have been erroneously transferred by Vahl and some later writers to the culm itself.

‡ The arrangement of the inflorescence is the same in *E. polystachyon*

each with a short, loose, truncate, membranous ochrea, and subtended by its proper bractea. They are clothed with a pubescence of most minute pale bristles, some porrect and some ascending*. Lowest bractea with a ribbed, submembranous, inflated base, and a leaf-like point, scarcely so high as the spikes in flower, which in the second often, and always in the third, is reduced to a mere mucro, the bractea appearing but a wider and more numerously ribbed glume. Glumes all fertile, gradually smaller upward, with several lateral nerves on each side of the midrib. Stamens much longer than the glume; anthers linear, pale yellow. Germen obovate. Stigmas wavy, longer than the style, usually three and simple, but occasionally four, and sometimes deeply cleft. Fruit pale brown, oblong-obovate, three-sided, the side next the rachis wider, sometimes with a central ridge resembling a fourth angle. The numerous hairs that surround the fruit are very slender, each being composed of scarcely more than two longitudinal series of vessels: they at length form a compact mass, about twice as long as the spike.

The tall slender habit and very peculiar leaves readily distinguish this species. The tassels too are smaller and of a purer white, and the individual hairs more slender, than in *E. latifolium* and *E. polystachyon*, and the peduncles, glumes and fruit afford decided characters. The clothing of the peduncles seems to have been overlooked by the two contemporaneous original describers†. It is yet more remarkable that Vaillant's *t.* 16. *f.* 2., manifestly *E. latifolium*, should have been referred with "bona" to this species in the *Catalecta*, and by several subsequent writers. The references to Tournefort and Scheuchzer, moreover, must ever remain in doubt; Tournefort adding nothing to the mere phrase *Linagrostis*

(*E. angustifolium*, *Engl. Bot. t.* 564.), and *E. latifolium* (figured as *E. polystachyon*, *Engl. Bot. t.* 563. and again as *E. pubescens*, *Suppl. t.* 2633.). In the latter the long lower peduncles are often again branched in similar order. In the former the peduncles are sometimes all very short, when the plant becomes *E. Vaillantii* of authors.

* In *E. latifolium* the bristles are coarser, appressed, all pointing forwards; not, as Wallroth in *Ann. Bot.* repeatedly asserts, backwards.

† Roth's *Cat. Bot. fasc.* 2. and Hoppe's *Taschenbuch*, bear the same date, 1800. Hoppe recurs to his *E. triquetrum* in 1801 and 1802, but makes no mention of this character. Schrader and Vahl noticed it in their respective works in 1806. Schrader's description is, as usual, masterly.

paniculâ minore, and Scheuchzer only stating under his No. 2, that a plant (which he does not appear to have seen), reported to differ from his No. 1 (*E. latifolium*) only by its smaller, rather shorter and narrower spikes, may probably be identical with Tournefort's. Wahlenberg, in his *Fl. Suec.* gives *E. polystachyon* γ. *Linn. Fl. Suec.* as a syn. of *E. gracile*, but assigns no reason: whereas Linnæus adopts without description or remark the No. 3 of Scheuchzer, *Linagrostis palustris angustifolia*, &c., evidently the *E. angustifolia* of Roth and Dickson, which Wahlenberg himself regards as *E. polystachyon*, *Linn.*, a judgment confirmed by the three specimens in the Linnean herbarium. To the last-mentioned species probably belongs the *E. gracile*, *Engl. Bot. t.* 2402. The specimen there figured is preserved in the Smithian herbarium, and we believe it the same as a plant with few and small spikes on smooth peduncles, common in Wales and apparently in Scotland, and occurring even in Sussex and Surrey, the *E. angustifolium* γ. *alpinum oligostachyum*, we presume, of Gaudin, *Fl. Helv.* and δ of Koch's *Synopsis*. Should this prove distinct, as Gaudin suspects it may, *oligostachyon* may be adopted as the trivial name. Bertoloni and some others appear to confound this with the true *E. gracile*. —W. B.

2887.

PHASCUM Floerkeanum.

Floerke's Phascum.

CRYPTOGAMIA Musci.

GEN. CHAR. *Fruitstalk* terminal. *Capsule* closed (lid persistent, indehiscent). *Peristome* none. *Calyptra* dimidiate, or sometimes campanulate.

SPEC. CHAR. Stem scarcely any. Leaves crowded, spreading, ovate-acuminate, concave, nerve excurrent. Capsule roundish-ovate, with a short straight beak, almost sessile, immersed in the leaves. Calyptra mitriform.

SYN. Phascum Floerkeanum. *Weber & Mohr. Bot. Tasch.* 70. *Schwaegr. Suppl. v.* 1. *pt.* 3. *t.* 3. *Nees & Hornsch. Bryol. Germ.* 1. 52. *t.* 10. *Bruch & Schimper Bryol. Europ. fasc.* 1. 8. *t.* 3.

THIS very interesting addition to our list of British Phasca is perhaps the very least of all known mosses. Its discovery in Britain is due to Mr. R. B. Bowman of Newcastle, who found it in 1840 on the Durham coast, while in quest of *Phascum crassinervium*, in fields half-way between Sunderland and South Shields. It has since been found in plenty by Mr. Thornhill (whose specimens are here figured) in fields one mile from Ravensworth Castle in the county of Durham, growing on clayey deposits in a pasture field occasionally overflowed by the Team, in November of the same year.

This moss grows more or less scattered, never actually crowded together into tufts, and in the colour of the foliage scarcely differs from the soil on which it is found. It is scarcely one-fortieth of an inch in height: our specimens

indeed are smaller than some which we have received from the continent. Leaves few, the uppermost larger than the rest, ovate-acuminate, concave, the points somewhat recurved, and the margins slightly reflexed, the reticulation formed of rhomboidal pellucid areolæ. Capsule reddish brown, with a thick blunt beak one third of its own length; it is attached to a very short stout pedicel, and is entirely concealed by the leaves; its walls thick, and when seen by transmitted light, of a full yellow colour. Sporules numerous, small and very pale. Calyptra somewhat conical, rarely cloven on one side.

From *P. cuspidatum* our moss is readily distinguished by its much smaller size, and short ovate leaves. In general aspect and size it more resembles *P. muticum*, from which it is abundantly distinct.

According to Bruch and Schimper this species is dioicous, but in our specimens naked antheridia are found in the axils of one or two of the uppermost leaves of the fertile plant, unaccompanied by jointed filaments.—W. W.

2888.

GRIMMIA orbicularis.

Round-fruited Grimmia.

CRYPTOGAMIA Musci.

GEN. CHAR. *Fruitstalk* terminal. *Peristome* simple, of 16 entire or perforated (rarely cloven) equidistant teeth. *Calyptra* mitriform.

SPEC. CHAR. Stems densely tufted, branched. Leaves crowded, oblong-lanceolate, hair-tipped. Fruitstalk curved. Capsule drooping, roundish, faintly striated. Lid very short, conical. Teeth of the peristome perforated, trifid at the apex. Calyptra dimidiate.

SYN. Grimmia orbicularis. *Bruch in lit.*
G. africana: *Arnott in lit.*
Dryptodon cribrosus. *Bridel. Bryol. Europ. v.* 1. 198.
D. obtusus. *Brid.* ?

FOUND on Ormeshead in 1826 by the writer of this article, and subsequently by F. K. Eagle, Esq., on St. Vincent's Rocks. For recent specimens from the latter place we are indebted to Mr. Thwaites, who gathered them in March 1843.

So great is the resemblance between this moss and *G. pulvinata*, that many bryologists have regarded them as varieties of one species. An attentive examination of the two will however show that they are really distinct. They grow together in the same localities (on limestone rocks), and are sometimes intermixed in the same tuft, each preserving its proper character. The stems grow in compact round tufts, and are sparingly branched. They are of a darker hue than

those of *G. pulvinata*. Leaves dark green, narrower, smaller, and more crowded than in that species, widest in the middle; margins recurved, except at the very base, where a few of the marginal cells are pellucid and larger than the rest; the nerve excurrent, forming a hair-like termination. Fruitstalk more twisted when dry. Capsules smaller, generally of a roundish form, rarely oblong, smooth and glossy while recent, the colour passing gradually from bright yellow to red, very different from the dull brown tints observable in the other species, and when dry more obscurely marked with 8 (sometimes 16) furrows; the mouth destitute of the blackish border seen in *G. pulvinata*. Annulus much narrower, and far less conspicuous. Teeth of the peristome of a paler red, shorter, less opaque, more distinctly marked externally with transverse bars, perforated near the middle, and almost always three-cleft at the apex; when dry erect or slightly convergent. Lid convex, very short, with an obtuse central prominence, sometimes conical, but never beaked. Calyptra dark brown, with a single lateral fissure (hence scarcely belonging to the genus), very deciduous, altogether unlike the 5-cleft mitriform persistent calyptra of *G. pulvinata*. Perigonia occasionally terminal, sometimes axillary on the fertile stems.

This species may always be known by its very short operculum, and by the bright hues of the small round capsules, resembling little lemons, beautifully contrasted with the blackish foliage in which they are partially concealed.

Our figure is accompanied with a representation of the capsule and operculum of *G. pulvinata*. (See fig. *a*.)—W. W.

2889.

CALLITHAMNION barbatum.

Bearded Callithamnion.

CRYPTOGAMIA Algæ.

GEN. CHAR. *Filaments* mostly pinnated, rarely dichotomous; dissepiments colourless. *Capsules* scattered, with wide colourless borders. *Receptacles* sessile on the branches, lobed, containing large granules.—*Harv.*

SPEC. CHAR. Stems rising from creeping filaments, tufted, much and irregularly branched; branches opposite or alternate, either simple or pinnulated for half their length, with minute, opposite, spine-like, erecto-patent ramuli. Articulations 2 or 3 times longer than broad. Capsules elliptic-oblong, sessile on the sides of the pinnulæ.—*Harv.*

SYN. Callithamnion barbatum, *Ag. Sp. Alg. v.* 2. 181. *Harv. Brit. Alg.* 114.

FORMING densely tufted deep red patches, from 1 to 2 inches high, on mud. From the creeping filaments, which consist of joints 3–4 times as long as broad, arise erect threads which are more or less naked below, but clothed above with irregularly placed short patent branches; some of which are simple, or furnished with a few irregular pinnæ; others, especially towards the top, are pretty regularly pinnate for the greater part of their length with short opposite pinnæ, of which here and there an individual is furnished with a short branchlet. Capsules oblong-elliptic, seated laterally, without any stipes, on the pinnæ either externally or internally, with a broad pellucid margin. Main articulations 3–4 times as long as broad.

Found at Ilfracombe and on the quay at Penzance by J. Ralfs, Esq., from whom we have received our specimens. We have also dredged what we believe to be the same plant in deep water at Weymouth, attached to *Ulva lactuca* and other algæ. The species is undoubtedly allied to *Callithamnion Pluma*, but is readily distinguished not only by habit but by the very different fructification. Mr. Harvey had, no doubt, good grounds for referring the species to Agardh's plant, though the characters in the *Species Algarum*, which are however confessedly drawn up from imperfect specimens, are not very distinctive. According to Mr. Ralfs it is probably a perennial species.—M. J. B.

Oct.r 1st 1841

2890.

ARENARIA uliginosa.

Bog Sandwort.

DECANDRIA Trigynia.

GEN. CHAR. *Calyx* of five leaves. *Petals* 5, undivided. *Stamens* 10. *Styles* 3. *Capsule* 1-celled, many-seeded.

SPEC. CHAR. Perennial. Stem ascending, branched, leafy, terminating in elongated, slender, erect peduncles, with 1–3 flowers; when 3, the lateral pedicels with 2 small bracteas. Leaves subulate, semiterete, obtuse, glabrous. Calyx-leaves ovate, acuminate, 3-nerved, about as long as the petals and "rather longer than the ripe capsule."

SYN. Arenaria uliginosa. *Schleich. Cent.-Exsicc.* 1. *no.* 47. *DeCand. Fl. Fr. v.* 4. 786. *Ic. Pl. Gall.* 14. *t.* 46.

Spergula stricta. *Swartz Vet. Ac. Handl.* 1799. 235–239. *t.* 3.

Alsine stricta. *Wahl. Lapp.* 127. *Fl. Suec.* 279.

Sagina *ramis erectis bifloris. Linn. Lapp. no.* 158.

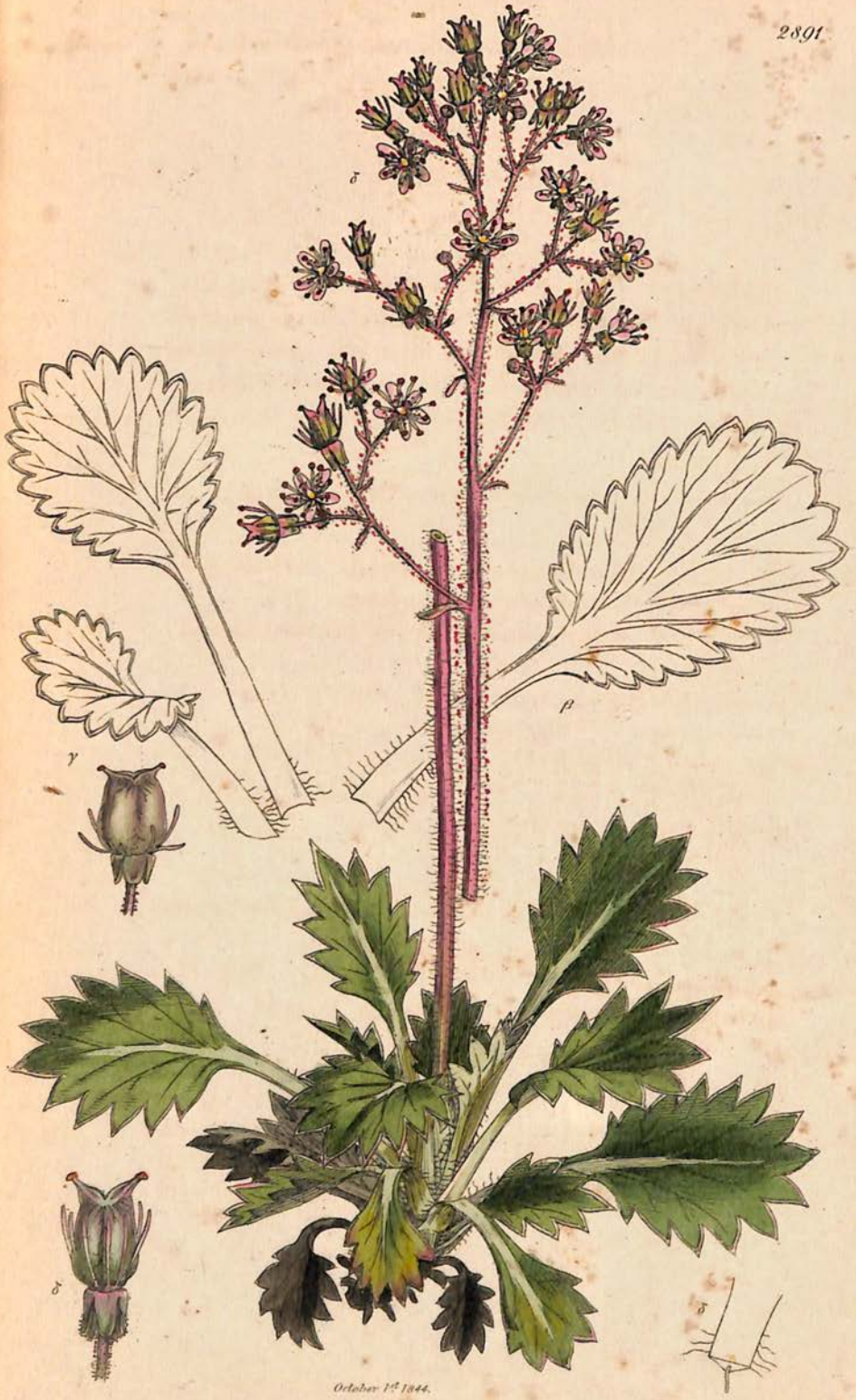
Alsinanthe stricta. *Reich. Icon. cent.* 14. 29. *f.* 4935.

FOR this highly interesting addition to the British Flora we are indebted to a little band of botanists* who made an excursion to the Yorkshire mountains in the summer of 1844, and detected it in a very circumscribed locality, and in very small quantity, upon the banks of a little stream on Widdybank Fell, not far from Langdon foot-bridge. We have had the opportunity of comparing the first specimens that were gathered

* Mr. John Tatham, jun., of Settle, Messrs. James Backhouse, sen. and jun., of Darlington, Mr. Silvanus Thompson of York, and Mr. G. S. Gibson of Saffron Walden.

with authentic Lapland ones from Professor Wahlenberg, and there can be no question of their identity. It will be seen by the synonyms that a difference of opinion has existed as to the genus of the plant; but when it is considered that the group of *Alsine* to which this belongs has been, by almost universal consent, referred to *Arenaria*, and that the modern genus *Alsinanthe* is but a subgroup of *Alsine*, we cannot do wrong in preferring the name of Schleicher, adopted by De-Candolle. It should rank near *Arenaria Rossii* and *Michauxii*, two species of North America. In the British Flora its nearest affinities are *A. verna* and *rubella*.

The plant grows in a tufted manner, but not densely so, and is everywhere glabrous. Root small, descending, fibrous, said to be perennial. Stems several from the same point of the top of the root, spreading, procumbent at the base; the leafy portion, or stem proper, is short, from 1 to 2–4 inches, simple or branched, wiry. Leaves more or less crowded, opposite, connate, curved inwards towards the centre of the tuft, narrow linear-subulate, scarcely tapering, obtuse, flat on the inside, semiterete on the back, of a dark lurid or purplish green, as is the whole plant; when dry an obscure line or depression appears on the keel at the base. The stems, or their branches, are lengthened out, above the leafy portion, into what may be called a terminal erect peduncle 2–4 inches long, bearing 1–3 pedicels an inch or more long; when the pedicels are 3, they form a kind of umbel, with a pair of small leaf-like bracts at the base, and each lateral pedicel has near the middle a lesser pair of such bracts. Calyx of 5, ovate, acute, or slightly acuminate, 3-nerved leaves, the nerves disappearing near the middle, the margin membranaceous and almost white. Petals oval, or rather obovate, obtuse, a little shorter than the calyx, obscurely 5-nerved. Stamens 10, alternately a little longer. Filaments white. Anthers subrotund, yellow. Germen between ovate and subglobose, much shorter than the petals, obtuse, with the sutures of the 3 valves distinctly marked, as well observed by Wahlenberg. The mature capsule we have not seen; it is said to be nearly equal in length with the calyx and petals. Styles 3, spreading. Stigmas obtuse.—W. J. H.



October 1st 1844.

2891.

SAXIFRAGA umbrosa δ. *serratifolia.*

Serrated-leaved London Pride.

DECANDRIA Digynia.

GEN. CHAR. *Calyx* 5-cleft, superior or inferior. *Petals* 5. *Styles* persistent. *Capsule* 2-celled, with 2 beaks, opening by a pore between the beaks.

SPEC. CHAR. Leaves obovate with cartilaginous crenatures or sharp notches, tapering at the base into dilated flat petioles. Panicle racemose. Calyx inferior, reflexed. Filaments enlarged upwards:

α. *crenata.* Leaves bluntly crenate, spreading. *E. Bot. t.* 663.

β. *crenato-serrata.* Leaves deeply crenate and apiculate or subserrate, spreading.

γ. *punctata.* Leaves nearly round, serrate, ascending.

δ. *serratifolia.* Leaves oblong, acutely serrate, ascending.

SYN. Saxifraga umbrosa γ. serratifolia. *D. Don in Trans. Linn. Soc. v.* 13. 352. *Sm. Eng. Fl. v.* 2. 262. *Mack. Fl. Hibern. pt.* 1. 66. *Bab. Man. Br. Bot.* 116.

S. serratifolia. *Mack. in Reich. Iconog. Bot. cent.* 7. 12. *t.* 624.

Robertsonia serrata. "*Haw. App. Succ.* 322."

R. umbrosa γ. serratifolia. *Lindl. Syn.* 71.

MR. MACKAY having favoured us with very fine living cultivated specimens of this plant, as well as of *S. Geum* and *S. elegans*, it has been considered advisable to publish a figure of each of them, so that botanists may be made acquainted

with the appearance of the plants as they exist in Ireland. Tab. 663, drawn from Yorkshire specimens, represents the typical form of *S. umbrosa*, and is distinguished by having its leaves quite bluntly crenate and spreading. It is so very different in appearance from that which is now figured, that if numerous intermediate states did not exist, they might reasonably be considered as distinct species. The leaves of two of these intermediate forms are represented on the plate, viz. *β. crenato-serrata*, Bab. (*S. umbrosa α.* Mack.), having oblong, bluntish, spreading leaves which are deeply crenate and apiculate, or subserrate, making the nearest approach to the typical *S. umbrosa* of any of the Irish varieties, and found by Mr. Mackay in 1805 in the "woods of Glengariff and on Connor Cliffs near Dingle;" and *γ. punctata*, Don. (*var. β.* Mack.), the common form in Cunnamara, Galway, and not unfrequent near Killarney, in which the leaves are nearly or quite round, serrate, and ascending. It ought however to be stated, that in the neighbourhood of Killarney, where the forms of *S. umbrosa* abound, it is not easy to find any two specimens corresponding exactly with each other, and that therefore these figures are to be considered only as portraits of carefully selected individuals of each variety.

The plant represented by our principal figure is the most extreme deviation from the Pyrenean type of *S. umbrosa* which has been observed. It was discovered by Mr. Mackay in the Gap of Dunloë near Killarney in the year 1804, and supposed to be peculiar to that place, but in 1836 I found it in Cunnamara, and in 1841 gathered it in several places near Killarney, and on Connor Hill near Dingle.

All the varieties of *S. umbrosa* are distinguished from the allied species by having dilated petioles, which are quite flat above and scarcely convex even beneath. The leaves are very thick and coriaceous. The stem is usually about a foot high, and the beautifully spotted flowers are in perfection during the month of June, when they form one of the greatest ornaments of the woods and mountains near Killarney.

The specimen figured is from the original root, introduced into the College Botanical Garden at Dublin from its native locality by Mr. Mackay.—C. C. B.

Feb. 1st 1845.

2892.

SAXIFRAGA elegans.

Small round-leaved Saxifrage.

DECANDRIA Digynia.

GEN. CHAR. *Calyx* 5-cleft, superior or inferior. *Petals* 5. *Styles* persistent. *Capsule* 2-celled, with 2 beaks, opening by a pore between the beaks.

SPEC. CHAR. Leaves round, smooth, shining, acutely serrate. Petioles broad, flat above, convex beneath. Panicle racemose. Calyx inferior, reflexed. Filaments enlarged upwards.

SYN. Saxifraga elegans. *Mack. in Reich. Iconog. Botan. cent.* 7. 12. *t.* 625. *Fl. Hibern. pt.* 1. 65. *Bab. in Ann. Nat. Hist. v.* 8. 323. *Man. Br. Bot.* 116. *Walp. Repert. Bot. v.* 2. 364.

S. Geum δ. *Hook. Br. Fl. ed.* 5. 127.

Robertsonia Geum β. elegans. *Lindl. Syn.* 70.

THIS highly elegant plant is probably less local than has been hitherto supposed. Mr. Mackay discovered it in 1805, "on a rock on the summit of Turk mountain near Killarney," and still believes it to be confined to that spot. In 1841 I found it upon that mountain, but after a diligent search could not detect it in more than one spot under, not upon, a rock. In the same year I also gathered it on Connor Hill near Dingle, and in 1843 observed what I believe to be the same plant, but without flowers, by the Galway river near to the old road from Killarney to Kenmare.

The accompanying figure is drawn from specimens sent from the College Botanical Garden at Dublin by Mr. Mackay, and represents the constant appearance of the cultivated plant.

In a wild state the flowers are usually fewer in number, and the leaves when growing under a rock have frequently stalks of fully twice their own length.

As this species exactly resembles *S. umbrosa* in most particulars, it does not appear to be necessary to do more than point out its peculiarities. It is distinguished from all of its allies by the constant roundness of its leaves, the length of which when fully grown scarcely at all differs from their breadth; by their base being neither cordate nor narrowed into the petiole; and by the petioles, although broad and flat above, being convex beneath. Judging from Mr. Sowerby's drawings, the shape of the capsule and the direction of the styles may afford distinctive characters for these plants.

Our present subject is the best of the Robertsonian group of Saxifrages for cultivation, and from the shortness of its petioles and its rose-shaped tufts of leaves, it forms a peculiarly neat edging for garden beds, flowering in June.—C. C. B.

Feb.ʳ 1. 1845

2893.

SAXIFRAGA Geum.

Kidney-leaved Saxifrage.

DECANDRIA Digynia.

GEN. CHAR. *Calyx* 5-cleft, superior or inferior. *Petals* 5. *Styles* persistent. *Capsule* 2-celled, with 2 beaks, opening by a pore between the beaks.

SPEC. CHAR. Leaves transversely oval or reniform, crenate or dentate. Petioles semicylindrical, channeled, hairy. Panicle racemose. Calyx inferior, reflexed. Filaments enlarged upwards.

SYN. Saxifraga Geum. *Linn. Sp. Pl.* 574. *Eng. Bot. t.* 1561. "*Lapeyr. Pyren. v.* 1. 46. *t.* 24." *Pers. Syn. v.* 1. 488. *D. Don in Trans. of Linn. Soc. v.* 13. 349. *Sm. Eng. Fl. v.* 2. 261. *Reich. Iconog. Botan. t.* 628. *Mack. Fl. Hibern. pt.* 1. 64. *Hook. Br. Fl. ed.* 5. 127. *Bab. Man. Br. Bot.* 117.

Robertsonia Geum. *Lindl. Syn.* 70.

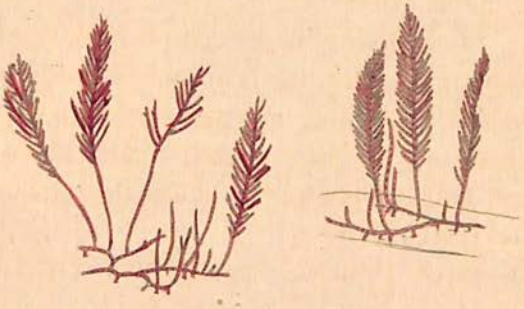
WE have considered it advisable to give a new plate in illustration of this species, in order to convey a clearer idea of the Irish plant than can be obtained from that (*t.* 1561.) formerly published. Our friend Mr. J. T. Mackay has most kindly supplied us with beautiful living specimens, from roots which have long been in cultivation in the botanical garden over which he so efficiently presides. They correspond exactly with the wild plant as seen upon the mountains of Kerry, and differ from Pyrenean specimens (to which all the foreign synonyms refer except that of Persoon, who says, "foliis dentatis,") in the same manner as the Irish *S. umbrosa* differs from that of the Pyrenean mountains. All the Irish forms of *S. Geum* which we have seen have acutely crenate o

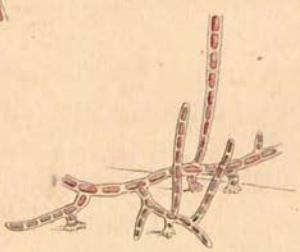
dentate leaves. In specimens from the Pyrenees the crenatures are very broad and scarcely at all pointed, or flattened at the top and even retuse. It is worthy of notice that a plant found (naturalized) in Collinton woods near Edinburgh agrees with the latter, and a specimen which Mr. C. H. Wright of Keswick states that he gathered in a perfectly wild condition near Cockley Beck, Cumberland, corresponds accurately with the former of the Pyrenean varieties.

Our principal figure represents the usual appearance of *S. Geum* in the south-west of Ireland, but the leaves are frequently nearly without hairs upon the upper surface. The large detached leaf shows the sharply toothed form ("*var. β. Fl. Hibern.*, *R. dentata* of Haworth," Mack.), in which both surfaces are frequently quite glabrous, and the texture of the leaf is more coriaceous. The small hairy leaves belong to a very elegant plant ("*var. δ. Fl. Hibern.*, *S. gracilis*, of Mackay's *Cat. of Irish Pl.*" Mack.), found near Killarney and on Connor Hill near Dingle. In the two latter forms the petals are usually spotless, but in the other a few dark points are always found in addition to the constant yellow spot.

The leaves are either about as broad as long, or even considerably broader, and usually cordate at the base, their margin more or less acutely crenate or dentate. The under surface of the leaves is either of an uniform pale green, or is covered with a beautiful purple network, or is wholly purple. The petioles are always semicylindrical, with their upper surface channeled. The flowering stem is from 6 to 12 inches high, and the flowers are in perfection in the month of June.

The different forms of this species inhabit in profusion the mountainous districts near Killarney, Glengariff and Dingle, in the south-west of Ireland.—C. C. B.





2894.

CALLITHAMNION Pluma.

Feathery Callithamnion.

CRYPTOGAMIA Algæ.

GEN. CHAR. *Filaments* mostly pinnated, rarely dichotomous; dissepiments colourless. *Capsules* scattered, with wide colourless borders. *Receptacles* sessile on the branches, lobed, containing large granules.—*Harv.*

SPEC. CHAR. Stems rising from creeping filaments, erect, subsimple or alternately branched; branches naked below, the upper half pinnated with short, erect, close-set, opposite ramuli. Articulations 2–4 times longer than broad. Capsules globose, stalked.—*Harv.*

SYN. Callithamnion Pluma. *Ag. Sp. Alg. v.* 2. 162. *Harv. in Hook. Eng. Fl. v.* 5. *pt.* 1. 115.

Callithamnion plumula pusilla. *Lyngb. Hyd. Dan.* 127. *t.* 39. C.

Conferva Pluma, *Dillw. t.* F. (*fig. excellent.*)

Ceramium Pluma, *Duby Bot. Gall.* 970. *Desm! Pl. Crypt. Fr. no.* 1026.

FORMING short tufted patches, ¼ to ½ an inch high, on the stems of *Laminaria digitata*, rising from creeping filaments which are attached to the matrix by short processes, divided at the tips into little papillæ. Stems erect, nearly simple or slightly branched; branches naked below, but regularly pinnate above, with short, erect, opposite, mostly simple pinnæ, so as to form little rose-red feather-like fronds. Capsules globose, generally seated on the tips of the pinnæ. Articulations of the main stem 2–4 times longer than broad.

This appears to be a generally diffused species, which was first observed by Miss Hutchins in Bantry Bay. Lyngbye's plant, and consequently Agardh's, is much more divided than English specimens. The articulations in *Ceramium Turneri* are 5–10 times as long as broad, not to mention the far greater beauty of that species.—M. J. B.

Feb 1st 1845.

2895.

CAREX irrigua.

Moss Carex.

MONŒCIA Triandria.

GEN. CHAR. *Flowers* in imbricated spikes, each covered by a glume. *Barren flowers* without calyx or corolla. *Fertile flowers* with a single, urceolate, persistent perigone inclosing a nut. *Style* 1. *Stigmas* 2 or 3.

SPEC. CHAR., Barren spike solitary, terminal. Fertile spikes 2 or 3, upon long stalks, oblong, densely flowered. Bracteas auricled, foliaceous, rather broad, nearly flat. Glumes ovate-lanceolate, attenuated, acute. Stigmas 3. Fruit roundish-ovate, compressed, faintly ribbed, with a very short entire beak. Nut elliptical, triangular, beaked. Leaves linear, flat, smooth at the edges except near the apex.

SYN. Carex irrigua. *Hoppe Car. Germ. t.* b. 48. *Reich. Fl. Excurs. no.* 473. *Koch Syn. Fl. Germ.* 757. *Bluff et Fingerh. Comp. Fl. Germ. ed.* 2. *v.* 2. 625. *Bab. Man. Br. Bot.* 346. *Fries. Fl. Scan.* 190; *Nov. Fl. Suec. Mant. tertia,* 140.

C. limosa β. irrigua. *Wahl. Helv.* 173. *Hartm. Scand. Fl. ed.* 1838. 222. *Willd. Caric.* 90. *Kunth Caric.* 461. *Gaud. Fl. Helv. v.* 6. 93.

C. limosa γ. irrigata. *Wahl. Fl. Lap.* 243. *t.* 15. *f.* 2.

ROOT stoloniferous. Stems a foot or more in height, triquetrous, smooth except at the very summit, where the

angles are occasionally slightly rough. Leaves rather broad, flat, smooth, flaccid, their extreme point triquetrous with rough angles. Spikes 4 or 5; the terminal one usually barren, but occasionally having a few fertile flowers at its apex; the others fertile, oblong, densely flowered, stalked, slightly pendulous, not unfrequently having a few barren flowers at their base. When such occur in *C. limosa* they are always at the apex. Bracteas foliaceous, auricled at the base, rather broad, nearly flat. Glumes ovate-lanceolate, attenuated, acute, usually longer than the fruit, purple. Fruit (utriculus) roundish-ovate, broadest below the middle, narrowed at the base, compressed, at length lenticular, faintly ribbed, pale brown when ripe, beak very short and entire. Nut pale brown, elliptical, triangular, narrowed below, beaked. Stigmas 3.

This plant has usually been considered as a variety of *C. limosa* (*t.* 2043.), but is assuredly a distinct species. It inhabits deap peaty bogs in the North, and is stated by Fries to be "gramen œconomico respectu summopere insigne, in pratis paludosis sylvaticis Sueciæ occidentalis *præstantissimum fœnum* offerens:" it is therefore deserving the attention of possessors of deep bog land in situations where drainage is difficult. It was first discovered on the Muckle Moss, near Ridley Hall, Northumberland, by Mr. John Thompson of Crow Hall Mill, who kindly forwarded the specimens figured. It has been found also at Terregles near Dumfries, and by Professor Balfour, on a mountain towards the head of Loch Lomond. It flowers in June.—C. C. B.

May 1st 1845.

CAREX paradoxa.

Paradoxical Carex.

MONŒCIA Triandria.

GEN. CHAR. *Flowers* in imbricated spikes, each covered by a glume. *Barren flowers* without calyx or corolla. *Fertile flowers* with a single, urceolate, persistent perigone inclosing a nut. *Style* 1. *Stigmas* 2 or 3.

SPEC. CHAR. Spikes narrowly panicled, androgynous, sterile at the end; lower branches short, rather distant. Stigmas 2. Fruit ovate-gibbous, with numerous, short, elevated ribs near its base; beak bidentate, serrulate, wingless. Nut rhomboidal, constricted below, convex on both sides; beak very short; style slightly thickened at the base. Stem trigonous. Root tufted.

SYN. Carex paradoxa. *Willd. Act. Berol.* 1794. 39. *t.* 1. *f.* 1. *Caricol.* 39. *Schk. Car. t.* E. *no.* 21. "*Wahl. Act. Holm.* 1803. 142." *Spr. Fl. Hal. ed.* 2. *v.* 1. 405. *Hoppe Car. Germ. t.* a. 12. *Spenn. Fl. Frib.* 1048. *Gaud. Agrost. v.* 2. 90. *Kunth Caric.* 390. *Koch Syn. Fl. Germ.* 752. *Bab. Man. Br. Bot.* 337.

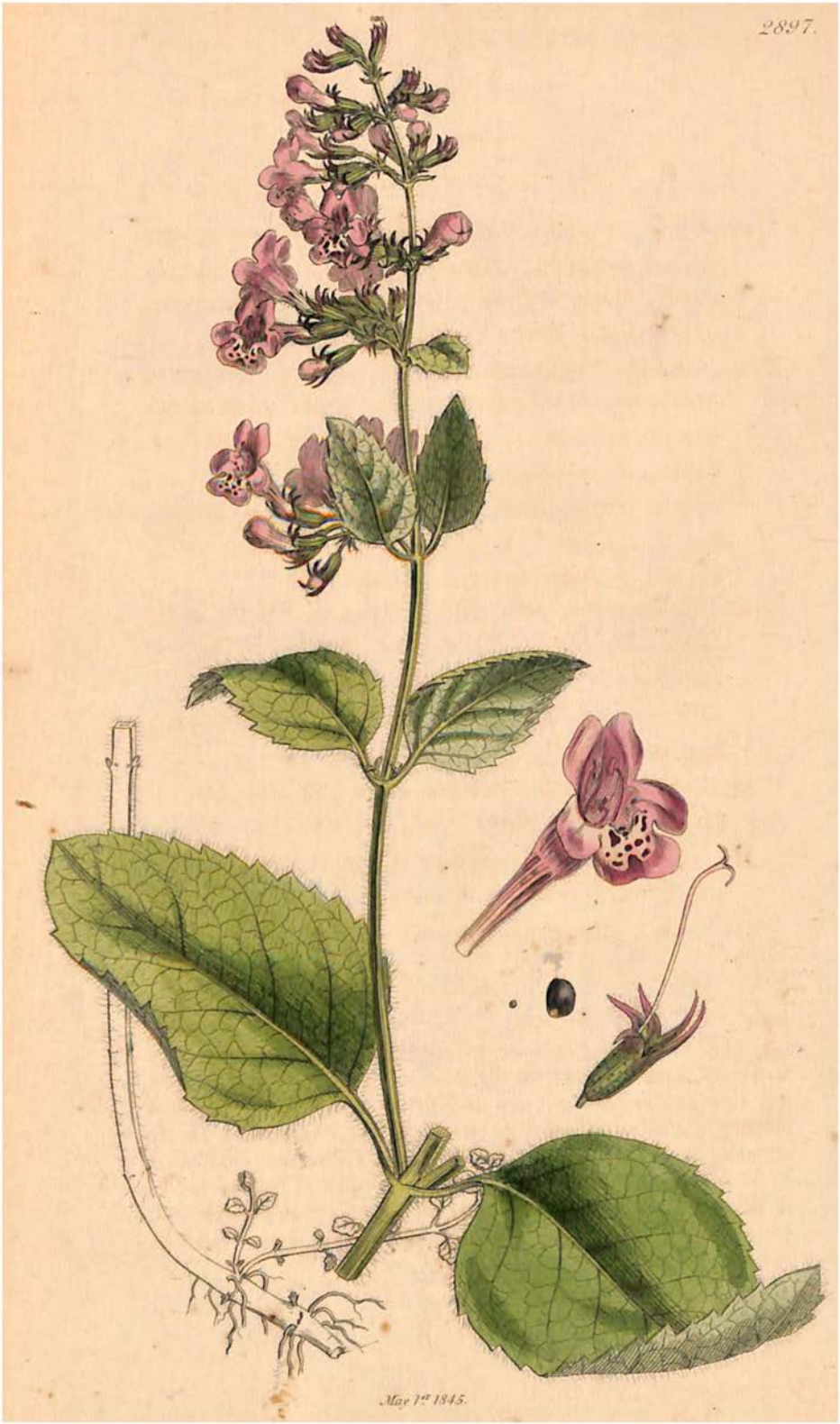
C. canescens. *Host. Gram. v.* 1. *t.* 57.

Vignea paradoxa. *Reich. Fl. Excurs. no.* 410.

DENSELY tufted. Stems 1–2 feet high, with numerous dark brown scales at the base, slender, trigonous, the faces convex, the angles scabrous towards the top. Leaves long, slender, rough at the edges, triquetrous at the end. Spikes scarcely panicled, but rather forming a compound oblong spike, close above but rather lax below. Spikelets with the upper

florets barren. Glumes oblong, acute, often mucronate, at first deep fuscous, afterwards paler, upper part of the midrib scabrous. Fruit (utriculus) ovate, gibbous on both sides, suddenly contracted below so as to appear stalked, with numerous short prominent ribs, (about seven on one side and nine on the other,) not extending to the beak; beak slightly notched at the end, the edges slightly margined and serrulate, the outer side convex, but without any wing. Nut suddenly widening below the middle, then gradually contracting to a blunt point furnished with a short beak. Style slightly enlarged at the base. Stigmas two.

This interesting addition to the British flora was discovered by D. Moore, Esq., in the month of July 1842, in a boggy wood at Ladiston near Mullingar, Ireland, from which place he obligingly sent the principal specimen represented on our plate. It has also been gathered in Heslington Field and Ascham Bog, both near York, by R. Spruce, Esq., from whose specimens we have added the advanced panicle and fruit.—C. C. B.



May 1st 1845.

2897.

CALAMINTHA sylvatica.

Wood Calamint.

DIDYNAMIA Gymnospermia.

GEN CHAR. *Calyx* tubular or subcampanulate, many-ribbed, 2-lipped, scarcely gibbous at base; mouth mostly hairy within. *Cor.* Upper lip straight, nearly flat; lower lip 3-lobed, patent.

SPEC. CHAR. Stems lax; branches few, elongate, nearly erect. Leaves ovate; upper ones acute, sharply serrate. Cymes many-flowered, stalked. Lower lip of corolla with contiguous segments; middle one scarcely longer than the two lateral, broad, shallow. Upper calyx-teeth erect or recurved. Root partly creeping.

SYN. Calamintha officinalis. *Mœnch. Meth.* 409? *Reich. Fl. Germ. Excurs. no.* 2244. *Fl. Germ. Exsic. no.* 1444.

C. officinalis, *α. Koch Deutsch. Fl. v.* 4. 318. (excl. figures quoted).

Melissa Calamintha. *Benth. Lab.* 388. (not Linn.). *Hoppe Ectypa Plant. cent.* 7. *t.* 613.

M. Nepeta. *Hoppe Ectypa Plant. cent.* 4. *t.* 397. not Linn. (certainly from the same species as *t.* 613, although the flowers are rather smaller).

THE beautiful plant here represented was found by the writer of these remarks on the 29th of August 1843, flourishing abundantly amongst the undergrowth of copsewood that clothes the sloping sides of a small but picturesque valley stretching up between the farms of Apes Down and Rowledge or Rowridge, about two miles and a half west of Newport, Isle of Wight, on the lower road from thence to Yarmouth through Carisbrooke. The plant occupies the western declivity of the

flowers and mode of growth, as by the long-stalked, cymose and lax verticillasters it constitutes, as it were, the stepping-stone of transition from that to the genuine Calamint section of the genus *Melissa* as defined by Mr. Bentham.

The specimen of *Melissa Calamintha* in the Linnæan herbarium, authenticated by the usual mark of reference to Linnæus's own copy of the *Species Plantarum*, seems rather to be the *M. Nepeta* of British authors, and scarcely differs, except in the length of the common flower-stalks, from another specimen so named and equally authenticated in the handwriting of Linnæus. To the former the word *Nepeta* with a query (?) is attached by Smith, clearly indicating a doubt as to which species it should be referred: at all events it has nothing to do with the species before us. Neither is the specimen representing *M. Calamintha* in Clifford's herbarium, which we have consulted, our *sylvatica*, but rather, if we mistake not, *M. grandiflora*, or perhaps *M. caroliniana*.

Mr. Borrer has long had *C. sylvatica* unchanged by cultivation in his own garden, having received it from that of Chelsea as *Melissa umbrosa*; but neither ours nor the *C. umbrosa* of Reichenbach* has anything to do with the original plant of Bieberstein, which is a strictly oriental species. Mr. Bentham tells me that he has gathered our *C. sylvatica* in the Pyrenees, that it is not uncommon in France, and that he has always regarded it as the *Melissa Calamintha* of Linnæus. Mr. Woods has collected a plant in Kent which he considers identical with the present; and as far as can be judged of from the single and not very good specimen seen by us, we are disposed to coincide with that gentleman and our kind friend Mr. Borrer in thinking them the same.

Unlike the common kind, our Wood Calamint loves a sheltered situation; and it does not thrive so well in the open flower-border as when treated as an in-door or greenhouse plant, like the Balm of Gilead, by which method of culture it becomes highly luxuriant and ornamental.—W. A. B.

* May not the figure of *Thymus Calamintha* in *Engl. Bot.* t. 1676. represent the *C. umbrosa* of Reichenbach? It is very unlike the common *C. officinalis*, and we have never seen a plant agreeing with it.

2898.

CUSCUTA Trifolii.

Clover Dodder.

PENTANDRIA Digynia.

GEN. CHAR. *Calyx* 4–5 cleft, inferior. *Corolla* 4–5 cleft, with an equal number of membranous scales placed within the stamens. *Capsule* bursting all round at the base, 2-celled; cells 2-seeded.

SPEC. CHAR. Heads of flowers sessile, bracteated. Tube of the corolla funnel-shaped. Scales converging, half as long as the tube of the corolla, fimbriated and rounded at the end, distant below with rounded saccate interspaces. Calyx narrowed below, equalling the tube of the corolla. Germen narrowed below. Stigmas filiform.

SYN. Cuscuta Trifolii. *Bab. in Phytol.* (*Feb.* 1843.) *v.* 1. 467. *Ann. Nat. Hist. v.* 13. 252.

C. Epithymum β. Trifolii. *Bab. Man. Br. Bot.* 303.

OUR present subject has slender claims to be considered as a native of Britain, but has recently become quite a pest in the clover-fields of the eastern and southern counties of England. It was probably introduced from the neighbouring continent with the seed of clover, and thus unintentionally sown by the farmer in the places where its destructive powers are afterwards exerted to his serious injury.

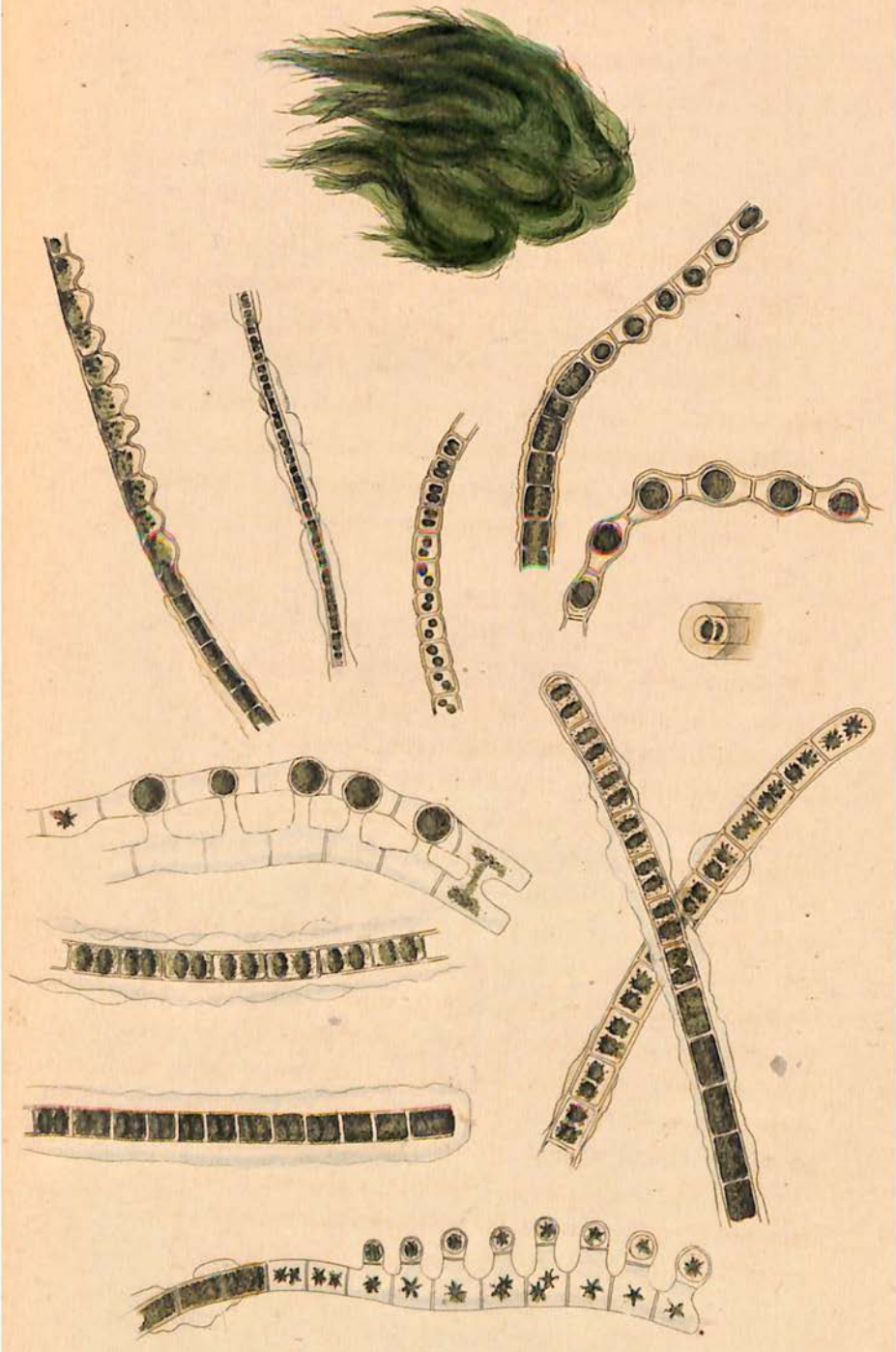
It was at first supposed to be a variety of the *C. Epithymum*, to which it bears considerable resemblance, but has since been distinguished from that plant; and although the specific characters originally pointed out were of an unsatisfactory kind, farther observation, by the addition of numerous decided but very minute differences, has strongly confirmed their specific

distinctness. The specimens represented on our plate were supplied from a clover-field near Henfield, Sussex, in August 1844, by Mr. Borrer, who has also observed it in other parts of that county, where, he tells us, it has abounded the last two or three years. He adds, that he knew it many years ago as a destructive weed amongst clover and vetches about Brighton, but had lost sight of it till very recently. We have seen numerous specimens from Norfolk, Suffolk and Essex.

Stems filiform, yellowish, or tinged more or less deeply with red, branching, leafless, but having a small ovate reddish scale at each subdivision. The clusters of flowers rather large, bracteated. Each flower larger than those of *C. Epithymum*, white or cream-coloured. The calyx long, funnel-shaped, about as long as the tube of the corolla; segments lanceolate, about as long as their tube, occasionally tinged with red. Corolla with lanceolate segments having attenuated points, and about as long as their somewhat irregularly funnel-shaped tube. Anthers purple, ovate, apiculate, the lobes rather distant below. Scales or processes of the corona about half as long as the tube of the corolla, narrow, their tops converging, rounded and fimbriated, slightly narrowed below, separated by deep, broad, rounded spaces in which the connecting membrane projects so as to form a cup-like hollow between it and the corolla: the line of attachment extends halfway up each scale and is rounded between them. Germen truncate, narrowed below. Styles and stigmas filiform, slightly converging, purple towards the end.

In *C. Epithymum* the calyx is bell-shaped and thin, usually reddish, shorter than the tube of the corolla; its segments broad, ovate, apiculate, and longer than their tube. Corolla with ovate-acute segments rather longer than their tube. Anthers not apiculate and even notched at the end. Scales nearly as long as the tube of the corolla, broad, meeting each other at an acute angle and separated by a deep, narrow space; the connecting membrane is adpressed throughout, but the tops of the scales converge. It thus appears that the differences between these plants are not inconsiderable.

C. Trifolii is most at home when growing upon clover (*Trifolium pratense*); but if deprived of its natural victim it can live upon many other plants. It flowers late in the summer. —C. C. B.



May 1st 1845.

2899.

TYNDARIDEA anomala.

Anomalous Tyndaridea.

CRYPTOGAMIA Algæ.

GEN. CHAR. *Filaments* simple, articulate, with internal cells; at length coupling by transverse processes. *Endochrome* of two stellate masses in each cell; that of the united cells mixing in conjugation and forming a globose *spore*.

SPEC. CHAR. Filaments enclosed in firm, waved, hyaline sheaths. Endochrome at first filling the subquadrate joints, afterwards bipartite. Spores occupying the inflated joints.

IT forms large, dark-green masses in shallow pools on heaths. The filaments are stout: under the microscope each is found to be enclosed in a hyaline sheath, which extends on each side about half the breadth of the coloured portion, and is always more or less waved or scolloped. At first it is nearly even, but it gradually becomes more and more irregular, and the conjugating specimens are almost denuded. The joints of the filament are usually about equal in length and breadth, but sometimes twice as long as broad. The endochrome is blackish-green, and at first quadrate, when it completely fills the joint; but its division into two portions gradually becomes apparent, until two stellæ, but less distinct than those in the other species, are at last developed, when conjugation takes place in the usual manner. The spores, which are globular, are contained in the joints of one of the connected filaments. Not unfrequently the tubular processes are themselves converted into cells containing endochrome.

In its early state this plant is so different in appearance from the other species, that at first sight its proper situation is scarcely apparent. Indeed, having sent specimens to several celebrated algologists, they hesitated to admit it into *Tyndaridea*, until Mr. Hassall, who also at first strongly doubted whether it belonged to the *Conjugatæ*, fortunately gathered fertile specimens. Such we ourselves found shortly afterwards, and we have since repeatedly met with them: the appearance of the plant in conjugation, however, is so altered, that its identity can only be determined by tracing it through all its changes.

In its usual state the sheath is very conspicuous, and the dense endochrome so fills the cells that the plant looks like a *Conferva*, the continuity being interrupted merely at the dissepiments. When about to conjugate, the sheath has nearly or altogether disappeared, and the endochrome is collected into two stellæ, leaving the rest of the cell colourless.

The peculiar appearance of the unconnected filaments will readily distinguish it from the other species; for although a few of them possess a sheath, none of them with which we are acquainted has waved margins.

For several years we have gathered *Tyndaridea anomala* abundantly both near Penzance and at Dolgelley. It has been also found in Sussex by Mr. Jenner, and at Highbeech, Essex, by Mr. Hassall.—John Ralfs.

July 1, 1843.

2900.

ERICA Mackaiana.

Mackay's Heath.

OCTANDRIA Monogynia.

GEN. CHAR. *Calyx* 4-parted. *Corolla* bell-shaped or ovate, often ventricose, 4-toothed. *Capsule* 4-celled, 4-valved; dissepiments from the middle of the valves.

SPEC. CHAR. Leaves 4 in a whorl, ovate, ciliated, the upper surface and midrib beneath glabrous; margins revolute. Flowers capitate. Sepals ovate-lanceolate, glabrous. Anthers awned. Ovary glabrous.

SYN. Erica Mackaiana. *Bab. in Linn. Trans. v.* 17. 456. *Mack. Fl. Hibern. pt.* 1. 181. *Bab. Man. Brit. Bot.* 192.

E. Mackaii. *Hook. in Comp. to Bot. Mag. v.* 1. 158. *Dur. Iter Astur. in Ann. Sc. Nat.* (*n. s.*) *v.* 6. 125. *Hook. Brit. Fl. ed.* 5. 207.

E. Mackayi. *Benth. in DeCand. Prod. v.* 7. 665.

WE have at length the pleasure of publishing a figure of this beautiful Heath, which was first gathered by the writer on September 2, 1835, by the side of the road between Crushtrour and Ballinaboy, in the district of Cunnamara, at the western extremity of the county of Galway, where it was pointed out to him by Mr. W. MacCalla of Roundstone, to whom belongs the credit of having distinguished this plant from *E. Tetralix*, with which it is still confounded by some botanists. It occurs there in considerable abundance, and is more especially plentiful about a low rocky mound called Craigha Moira. It is singular that during the same summer

it was observed by Durieu on the Sierra del Peral in Asturia; thus adding another proof of the similarity of the flora of the west of Ireland to that of the north-west of Spain.

Stem about a foot high, downy, irregularly branched throughout, particularly above; densely and equally leafy quite up to the flowers. Leaves spreading, four in a whorl, ovate, the margins revolute and fringed with stalked glands, quite without down, the under surface white and mealy, but the midrib bare. Flowers capitate, erect or pendulous; sepals ovate-lanceolate, glabrous, fringed with stalked glands, slightly mealy near the apex beneath. Corolla oblong-ovate, contracted at the mouth with a small reflexed limb, dark purple. Stamens included, filaments capillary, anthers awned at the base. Style protruded. Stigma capitate. Ovary glabrous.

It will be seen from the above description that the plant now figured differs very considerably from *E. Tetralix*, in which the stem is much less and far more regularly branched; the upper whorls of leaves more distant than the others, and usually leaving a leafless space under the head of flowers; the leaves are usually linear, and when young are always downy on their upper side and on the midrib beneath; the sepals are linear and downy, and the ovary is downy.

In order to explain the different forms of the specific name, it may be desirable to state that the present writer and Sir W. J. Hooker concurred in the wish that this plant should bear the name of Mr. J. T. Mackay, the distinguished Irish botanist; that the adjective form (*Mackaiana*) was adopted in the *Linnean Transactions* and the *Flora Hibernica*, in accordance with the rules of botanical nomenclature; and that the substantive form (*Mackaii*) was employed by Sir W. J. Hooker in the *Companion to the Botanical Magazine*, from an erroneous idea that Mr. Mackay had had some hand in its discovery or discrimination.

The drawing was made from wild specimens gathered in Cunnamara in August 1837, and the colouring and dissections are supplied from plants now growing in the Royal Botanic Gardens, Regent's Park, London.—C. C. B.

a

2901.

PHASCUM triquetrum.

Three-sided Earth-Moss.

CRYPTOGAMIA Musci.

GEN. CHAR. *Fruitstalk* terminal. *Capsule* closed (lid persistent, indehiscent). *Peristome* none. *Calyptra* dimidiate, or sometimes campanulate.

SPEC. CHAR. Stem scarcely any. Leaves in three rows, connivent, obovato-navicular, sharply keeled, margins reflexed, nerve excurrent. Capsule spherical, horizontal, immersed among the leaves. Calyptra subdimidiate. Inflorescence monoicous.

THIS highly beautiful and curious new species was found by Mr. Borrer in April 1844, growing in bare spots among short grass on the summit of the cliffs between Rottingdean and Newhaven, on the coast of Sussex. It has been overlooked as *Phascum muticum* by several eminent botanists; and we learn from Mr. Wilson that it is published under that name in Drummond's *Musci Americani*, No. 8, and in Mougeot and Nestler's *Stirpes Crypt. Vogeso-Rhen.*, No. 802. The Sardinian specimens of Müller, distributed by the *Unio Itineraria* under the name of *P. muticum*, belong partly to that species and partly to *P. triquetrum*.

This moss is about equal in size to its near ally *P. muticum*, but it grows in closer patches. The plants appear to the eye like little triangular bulbs, which are green at the time of flowering, but assume a reddish-brown tinge as they advance towards maturity. Leaves about nine in number, arranged in three ranks, closely imbricated and connivent; the three lowest minute, ovate, nerveless, occasionally cloven; the three uppermost (those of the perichætium) broadly obovate, apiculate, sharply keeled, remarkably boat-shaped, being hol-

lowed out upwards as it were for the reception of the capsule (which they closely embrace), and having the nerve at the point of greatest concavity bent at nearly a right angle, the margins reflexed above and denticulate, the points recurved and diaphanous, the nerve excurrent; the intermediate leaves resemble those of the perichætium, except in being smaller and less concave. Inflorescence monoicous; male flowers gemmiform, one or two in number, arising from near the base of the plant, each consisting of three or four minute obovato-lanceolate, nerveless leaves, sometimes bifid or even trifid, including two antheridia, destitute of paraphyses. Vaginula small. Calyptra minute, diaphanous, covering a very small portion of the capsule, subdimidiate, usually remaining in adhesion to the vaginula by its entire side. Pedicel very slender, curved at an early stage, but gradually raising itself erect as the capsule ripens and enlarges, suddenly bent at a right angle at its junction with the capsule. Capsule large, obsoletely rostellate and the axis considerably depressed when young, but when fully grown perfectly spherical, and the axis very nearly horizontal. Seeds rather large.

P. muticum, though closely allied to *P. triquetrum*, is well distinguished from it by the perichætial leaves being only two in number, strongly convolute and not keeled, the margins plane, the nerve never running beyond the point, and the areolation closer than that of *P. triquetrum*. Besides, the pedicel is shorter and stouter, the calyptra campanulate, the capsule smaller and quite *erect*, the seeds are smaller, and the inflorescence is dioicous.

P. triquetrum differs essentially from *P. Floerkeanum* and all its affinities, in the absence of a beak from the capsule.—R. Spruce.

2902.

CHORDA lomentaria.

Constricted Chorda.

CRYPTOGAMIA Algæ.

GEN. CHAR. *Frond* simple, interrupted within. *Fructification* pear-shaped spores, accompanied by jointed paraphyses.

SPEC. CHAR. *Frond* membranaceous, compressed, constricted at the septa, the intervals somewhat inflated.

SYN. Chorda lomentaria. *Lyngb. Hyd. Dan.* 74. *tab.* 18 *E. Grev. Alg. Brit.* 48. *Hook. Br. Fl. v.* 2. *pt.* 1. 276. *Wyatt Alg. Damn. no.* 6. *Fl. Dan. t.* 1903. *Lenormand no.* 338. *Harv. Man.* 35. *J. Ag. Alg. Mar. Medit. et Adriat.* 45. *Menegh. Algh. It. e Dalm.* 185. *t.* 4. *f.* 7.

C. Filum, γ. lomentaria. *Kütz. Phyc.* 334.

Scytosiphon filum, γ. lomentarius. *Ag. Sp. Alg. v.* 1. 162. *Syst.* 257.

Asperococcus castaneus. *Hook. Br. Fl. l. c.* 277.

Fucus lomentarius. *Sommerf. Supp. Fl. Lapp.* 184.

NOT unfrequent on rocks and stones. Our specimen was kindly sent from Penzance by Mr. Ralfs, who has also found *Chorda tomentosa*.

Fronds springing many together from a minute scutate base, 3 to 16 inches high, 1 to 4 lines broad, linear, simple, compressed, at first quite even, but soon constricted at irregular intervals and septate within, attenuated at either extremity,

especially below, flaccid, yellowish-olive, becoming darker with age. Paraphyses collected in little patches sunk in the more compact portion of the substance of the frond, clavate, scarcely at all moniliform.

The question as to the title of the present Alga to rank as a species has been set at rest by the discovery, by Signor Meneghini, of the fructification, which consists of pyriform spores as in the common *Chorda Filum*. He also figures the paraphyses as combined two or three together at the base, which confirms Dr. Greville's observation. I am not aware that fructification has yet been found in *Chorda tomentosa*, which appears to be equally entitled to rank as a species; but it will probably reward researches directed especially to its discovery. —M. J. B.

2903.

SAXIFRAGA affinis.

Involute Alpine Saxifrage.

DECANDRIA Digynia.

GEN. CHAR. *Calyx* 5-cleft, superior or inferior. *Petals* 5. *Styles* persistent. *Capsule* 2-celled, with 2 beaks, opening by a pore between the beaks.

SPEC. CHAR. Barren shoots trailing. Leaves 3–5-cleft, with a very broad base, fringed with jointed hairs; lobes linear, acute. Stem-leaves few. Flowers few (2–4). Calyx half inferior, deeply divided into subulate acute sepals. Petals oblong, inflexed at the sides, 3-nerved; nerves simple.

SYN. Saxifraga affinis. *D. Don in Trans. Linn. Soc. v.* 13. 418. *Sm. Engl. Fl. v.* 2. 275. *Hook. Brit. Fl. ed.* 3. 200. *Lindl. Syn.* 69. *Mack. Fl. Hibern. pt.* 1. 68. *Bab. Man. Brit. Bot.* 118.

S. lævis. *Mack. Cat. in Trans. Roy. Irish Acad. v.* 14. 142. (not *Donn Cat. Hort. Camb. ed.* 5. 107.)

S. hypnoides, var. *Ser. in DeCand. Prod. v.* 4. 30.

WE have much satisfaction in publishing a figure of this little-known plant, derived from living cultivated specimens supplied to us by Mr. J. T. Mackay, under whose care they have now grown for nearly forty years in the College Botanical Garden at Dublin, perfectly retaining their distinguishing characters, being only slightly more luxuriant than wild

specimens gathered on the summit of Brandon mountain in the county of Kerry, in July 1841, by the writer of this article.

Herb bright green, densely tufted before flowering, afterwards throwing out prostrate, lax, leafy shoots. Leaves fringed with jointed hairs, their bases long and broad, on the barren shoots 3-lobed; the lobes linear or linear-lanceolate, acute, mostly with a recurved bristle point, nearly parallel, the lateral ones sometimes bifid. Flowering stem erect, 1–3 inches high in the wild plant, glandular-hairy, bearing a few distant undivided linear leaves, and often one or more 3–5 lobed ones near its base. Flowers 2–4. Peduncles elongated after flowering, glandular-hairy, erect. Calyx glandular-hairy, deeply divided into subulate acute segments. Petals white, about twice as long as the calyx-segments, oblong, the sides inflexed, triply nerved, the nerves simple and not wavy. Germen half superior.

The only known station for this plant is the summit of Brandon mountain in the county of Kerry, at an elevation of about 3100 feet above the adjacent Atlantic. It was discovered there by Mr. J. T. Mackay in the year 1805, and has since been seen by the few botanists who have visited that wild and remote district. It flowers in July on its native mountain, but rather earlier in gardens.

The involute sides of the petals distinguish it from its near allies *S. hypnoides* and *S. hirta*, as do also the lobes of its leaves. Indeed this peculiarity in the petals seems to be, as our lamented friend Prof. Don observed, "an important differential mark; for in this respect it stands isolated amongst the numerous species which surround it." We fully concur with the late Sir J. E. Smith in considering this plant as "quite distinct from every other British species."

Some confusion has been caused by Mr. Mackay originally giving this plant the name of *S. lævis*, and leading Sir J. E. Smith to refer the *S. lævis* of *Donn's Catalogue* to *S. affinis* instead of to *S. denudata* of D. Don; this latter we believe to be only a form of *S. hypnoides*.—C. C. B.

Jan.y 1846.

2904.

VICIA gracilis.

Many-seeded Slender Tare.

DIADELPHIA Decandria.

GEN. CHAR. *Calyx* 5-cleft or 5-toothed. *Style* filiform, hairy all over or bearded in front.

SPEC. CHAR. Peduncles 1–7-flowered, at length about twice as long as the leaves, aristate; leaflets 2–4 pairs, erect, linear, acute; tendrils simple. Legumes sublinear oblong, 5–8- (mostly 6-) seeded. Seeds smooth, mottled; the hilum short, oval.

SYN. Vicia gracilis. *Lois. Fl. Gall. ed. 2. v. 2. 148. t. 12.* (optimè.) *Bab. Man. 79. Doll. Rhein. Fl. 790. Koch Syn. 192. Merat Nouv. Fl. de Par. 282. M. Biebers. Fl. Taur.-Caucas. v. 3. 474.*

V. laxiflora. *Brot. Phytog. Lusit. Select. 125. t. 52.*

Ervum gracile. *DeCand. Cat. Hort. Monsp. 109. Hook. Br. Fl. ed. 5. 89. Koch Deutsch. Fl. v. 5. 161. Sebast. et Maur. Fl. Rom. Prod. 248. Lej. et Court. Fl. de Spa, pt. 2. 108. Comp. Fl. Belg. v. 3. 68. Bab. Fl. Bath. 74.*

E. tetraspermum, β. *DeCand. Prod. v. 2. 367.*

E. varium. *Brot. Fl. Lusit. v. 2. 152.*

E. longifolium. *Ten. Prod. Fl. Neap. 59!*

E. tenuissimum. *Pers. Syn. 2. 309!*

E. polyspermum. *Sm. in Herb.*

E. tetraspermum, β. tenuifolium. *Fries Novit. Suec. ed. 2. 231.*

WE have followed many of the leading botanists of the day in giving the subject of these remarks as a species, rather

in deference to their judgement than from entire conviction of the propriety of so doing. We have observed the plant for several years past with a good deal of attention; and although firmly persuaded of the truth of what is as strenuously denied by others, the production of hybrids between wild vegetables, we shall merely hint the possibility of such agency to account for the occurrence of certain puzzling intermediate forms, which seem to forbid the separation of *Vicia gracilis* and *tetrasperma* as species.

Although long overlooked, *V. gracilis* occurs in several of the southern counties of England. Mr. Quekett has gathered it in Kent, Mr. Babington near Bath, and in the Isle of Wight it is sometimes to be met with abundantly, and as a troublesome weed, amongst corn; as also in waste places in hedges, and even in woods, often growing with *V. tetrasperma*. The specimen figured was gathered July 16th in a field near Coppid Hall in that island, where the wheat and adjoining hedge-rows were overrun with it. Mr. W. Andrews has also found it in the county of Kerry, Ireland.

It differs from *V. tetrasperma* in its generally greater size and somewhat glaucous hue; in its flowers, which are usually more numerous and twice or thrice as large, with the standard of a uniform lilac or rose colour, scarcely streaked as in that with darker lines; in the much longer, narrower and sharply acuminate leaflets, which seldom exceed three pairs, and stand erect in a remarkable manner on the common leaf-stalk, which terminates in a simple tendril, whilst in *V. tetrasperma* the tendril is mostly, though not invariably branched. Peduncles from 1- to 6- or 7-flowered, much longer, especially the upper ones, which when in seed are twice the length, or nearly so, of the leaf, from the axil of which they spring, terminating in a straight awn-like point (abortive flower?) occasionally observed in the other. Legumes longer and narrower, glabrous, rarely containing less than five or more than seven seeds, usually six. These are globose, dark gray or yellowish, clouded or mottled with black, and quite smooth, the hilum broadly oval, nearly circular.

All the above characters are assuredly liable to variation,

merging insensibly into those of *V. tetrasperma* in some one or more organs of the plant occasionally; so that whoever studies these species in their native localities, or will be at the pains of comparing the descriptions of Brotero, Bieberstein, and others, will see reason to doubt the propriety of keeping them asunder.

Brotero says of our *V. gracilis*, "Semina in germine 5 ad 7, fertilia 3, 4, 5, rarissime 6;" but his plate shows only four seeds in the pod; in this island they are almost constantly six. Specimens perfectly agreeing with our own are in the Smithian herbarium from Gibraltar and Tangier, which Sir James at that time appears, from a pencil note, to have thought a new species and called *Ervum polyspermum*. In the same herbarium is a specimen intermediate between the present plant and *V. tetrasperma*, gathered by Mr. Woodward many years ago, and noticed in *Engl. Bot.* under that species (*t.* 1223).

V. gracilis seems not unfrequent in the south and middle of Europe, and, if Fries's plant is the same, even in Sweden. It has not yet been recorded as inhabiting Scotland, in which country, as in Switzerland, *V. tetrasperma*, so common in England, is but rarely met with. In Portugal, Brotero tells us, it affords grateful food to cattle; it might therefore be worthy the notice of agriculturists at home.—W. A. B.

2905.

ALLIUM Scorodoprasum.

Broad-leaved Mountain Garlic.

HEXANDRIA Monogynia.

GEN. CHAR. *Perianth* single, of six petaloid leaves. *Stamens* inserted at the base of the perianth. *Anthers* incumbent. *Germen* superior, of three lobes inclosing the base of the style. *Stigma* simple, or slightly incrassated.

SPEC. CHAR. Umbel of few flowers, with numerous spheroidal bulbs. Leaves flat, with two-edged sheath and rough edges and keel. Inclosed root-bulb single. Spatha obtuse, with a short point. Alternate filaments three-cleft; united part longer than the antheriferous point. Anthers slightly exserted.

SYN. Allium Scorodoprasum. *Linn. in Herb. Sp. Pl.* 103. *Fl. Suec.* 425. *Fl. Dan. t.* 290. "and *t.* 1455." *Fries Nov. Suec. ed.* 2. 84. *Wahl. Fl. Suec.* 197. *Scop. Fl. Carn. v.* 1. 236. *Poll. Fl. Palat. v.* 1. 336. *Mert. et Koch Deut. Fl. v.* 2. 527. *Host. Fl. Austr. v.* 1. 421. *G. Don in Mem. Wern. Soc. v.* 6. 7. (excl. syn. *Moris., Lobel, and Ger. Em.*) *Koch Syn. ed.* 2. 831. *Bab. Man. Brit. Bot.* 306. *Nees ab Esenb. Gen. Pl. Germ. t. Allium, f.* 14.

A. arenarium. *Linn. in Herb. Huds.* 138. *Lightf.* 179. *With. ed.* 3. 333. *Sm. Fl. Brit.* 134. *Engl. Fl. v.* 2. 134. (with syns. from *Haller* and ante-Linnean writers, excl. *Rudb. Elyss.*) *Engl. Bot.* 1358. (excl. fig.) *Hook. Fl. Scot.* 100. *Brit. Fl. ed.* 5. 347. *Wallr. Sched. Crit.* 131. (excl. syn. *Tabern.*). *Gaud. Fl. Helv. v.* 2. 484. *t.* 12.

f. 8. (not good.) *Roth Man. Bot. Germ.* 138. *Red. Lil. v.* 7. *t.* 379. *G. Don in Mem. Wern. Soc. v.* 6. 7? *Mack. Fl. Hibern. pt.* 1. 285.

A. seu Moly montanum latifolium. *Bauh. Hist. v.* 2. 559. *f.* *

Porrum Scorodoprasum. *Reich. Fl. Excurs.* 110. *no.* 754.

THIS Garlic is not common in the British Islands, although it has been observed in Scotland and Ireland, as well as in many places in the north of England. Our figure is from a specimen sent by Mr. John Tatham, in July 1843, from the neighbourhood of Settle, where it grows in meadows and thickets on a limestone soil. We trust that our endeavour to elucidate the species will prove acceptable, the figure given as *A. arenarium* in *English Botany*, *t.* 1358, representing a very different plant, apparently, if we except the small detached bulb, of the same section of the genus as *A. Schœnoprasum*. In this opinion we have the concurrence of Mr. Don, who now candidly expresses much doubt whether the *A. arenarium* of his own *Monograph* can be distinct from *A. Scorodoprasum*.

Plant perennial by renewal. Root a tuft of whitish slightly branched fibres, crowned with a little knob, from the upper side of which arise, side by side, a single scape and a sessile bulb†, with three or at most four leaves, closely sheathing both within their white tubular base, which, again, is coated externally with several brown scariose shells, the remains of a former bulb, and surrounded by smaller bulbs, the offsets of the preceding year, now released by the decay of the leaves within and between the bases of which they were produced. This bulbous base of the plant scarcely exceeds the size of a walnut, and tapers upwards. Inclosed bulb varying from the size of a pea to that of a hazel-nut, sub-globose, gibbous, apiculate, dark crimson, with a solid white nucleus, within which at length germinates the herb of the following year. Offset-bulbs of the same colour, more lengthened and compressed, raised upon white filiform stalks to the summit of the principal bulb, or even to some distance above it, and closely appressed

* The description and figure are copied from Clusius, from whom also Johnson (*Ger. Em.*) and Parkinson have borrowed the figure, of which Ray (who has copied the description in his own *Hist. Pl. p.* 1119) observes that it represents too many leaves. The stamens, too, are too much exserted, as they are also in Redouté's figure.

† Bulbs usually two, sometimes one, according to Scopoli. We have found one only.

to the scape. Leaf-sheaths investing the scape to about one-third of its height, faintly striated, compressed, two-edged, the edge continued from the keel of the leaf sharper than the other*; inner membrane produced, so as to form a narrow white intra-foliaceous stipule. Leaves 6 to 9 inches long, 4 to 6 lines wide, of a pale grass-green, flaccid, somewhat twisted upward, linear, bluntish, with a short laterally compressed point, striated, flat or but slightly carinate except near the base, edges and keel roughish with minute pellucid teeth. They sometimes remain, but are more usually dried up when the plant is in flower. Scape 2 or 3 feet high, cylindrical, smooth, slender and wavy, yet firm and solid. Spatha, in all that we have seen, single, scariose, short and broad with a short hollow point†, soon torn or altogether disappearing. Head compact, globular, sometimes double, parti-coloured from the intermixture of white, crumpled, filmy bracteal scales with the dark bulbs. These are numerous, not so large as a pea, rounded, but angular below from mutual pressure, mucronate, shining, of a dark purplish olive, but covered whilst young with a redder shell, which is often pale and membranous upward with a short green point. Flowers mostly few, never so numerous as the bulbs, among which they rise on dark purple stalks of unequal lengths, but all generally much longer than the bulbs, thickened immediately under the flower. Perianth ruby-coloured or of a paler hue, according to the degree of exposure; its segments oblong, rounded, connivent, but with a minute recurved apiculus from the darker roughish keel; the three outer ones, as usual in the genus, rather narrower, more concave and more strongly keeled. Stamens varying in hue like the perianth, and often as dark, close together, overarching the germen, but patent upward, and again slightly incurved immediately below the anthers; their lower part minutely ciliated: simple filaments tapering from a broad base; trifid ones twice as wide, the united part straight-sided, twice the length of the fertile point, which is about twice as long as the anther, and scarcely so high as the simple filaments; lateral points more than twice as long, tapering to a pale curled thread. Anthers purple, with pale pollen‡ partly

* With the exception of Roth, all the authors that we have consulted who regard the plant as *A. arenarium* of Linnæus, follow him in describing the leaf-sheaths as round, and Redouté represents them so in his otherwise faulty figure.

† Smith in *Engl. Bot.* says, "Bracteas 2 or 3." Hooker in *Fl. Scot.* says, "generally," Mackay in *Fl. Hibern.*, "often of 3 segments." Redouté gives 2 short segments. Scopoli describes it "Spatha longa." The "bicorne" in Bauhin's phrase in the *Pinax* seems to imply two long spaths. Haller says in his *Hist. Stirp. Helv.*, "Vagina bicornis, altero cornu longo, altero brevi:" yet his own figure, in his edition of the *Fl. Jenensis*, represents one short spath in accordance with Ruppius's description, "vagina unicornis, brevior."

‡ "Antheræ flavæ." Pollich.

exserted beyond the perianth. Lobes of the germen longitudinally furrowed; their interstices with a transverse projecting line, the portion below which is excavated. Style shorter than the stamens, trigonal, pale. Capsule we have not seen perfected.

The flower-stalks are usually one-flowered, but now and then in strong plants a lengthened one supports a small secondary head. The parts of the flower are occasionally sportive, the segments of the perianth varying to five or four, and those of the stamens, which are properly simple and tapering, becoming widened upwards, or acquiring one or two short lateral points. The bulbs of the head are sometimes viviparous before they fall. In large plants, clusters of smaller and longer bulbs, crowded in one spath-like scale, are often found among those of the ordinary shape and size.

Wahlenberg and Fries regard the *A. vineale* of authors (*Engl. Bot. t.* 1974) as the original *A. arenarium* of Linnæus; and Fries asserts that no one who has visited the Linnean stations of the species can doubt that it is so, endeavouring too, not very successfully perhaps, to account for Linnæus's ascription of flat leaves to his plant. However this may be, the specimens preserved in the Linnean herbarium for both species appear to belong alike to the plant before us, which the two eminent Swedish botanists concur in regarding as the *A. Scorodoprasum*, Linn. It is not however the *Scorodoprasum* of the old books. The figure so named by Lobel, *Stirp. Hist. p.* 79, repeated in his *Icones*, *t.* 196, reprinted by Clusius (*Hist. p.* 190) and Johnson (*Ger. Em. p.* 180. *f.* 2), and copied by Parkinson (*Theatr. p.* 872), by J. Bauhin (*Hist. v.* 2. *p.* 554), and by Morison (*Hist. v.* 2. *sect.* 2. *t.* 15. *f.* 12), is usually, and, we believe, correctly, referred to *A. Ampeloprasum* (*Engl. Bot. t.* 1657). The *Scorodoprasum* of Gerarde (*Ger. Em. p.* 180. *f.* 1*) is again different, probably the *Great Leek* of our kitchen gardens (*A. Porri* var.?), although the bulb is made too thick; and the figures of barren plants under the same name in Matthiolus (*in Diosc.*) and Camerarius (*Epit. Matth.*) may belong to the same. Among modern botanists, Villars, DeCandolle and other French authors, as well as Roth, Wallroth, Bluff and Fingerhuth, &c., take for *A. Scorodoprasum* the *β.* of Linnæus, *Scorodoprasum secundum* of Clusius, *Ophioscorodon dictum quibusdam* of J. Bauhin, *A. Ophioscorodon* of Don, which is nearly allied to *A. sativum*, if not a mere variety, as Treviranus regards it and Koch suspects it to be.—W. B.

* A reversed copy of *Porrum syriacum, Tabern. Kräut. p.* 872. *f.* 1.

2906.

ALLIUM Babingtonii.

Babington's Garlic.

HEXANDRIA Monogynia.

GEN. CHAR. *Perianth* single, of six petaloid leaves. *Stam.* inserted at the base of the perianth. *Anth.* incumbent. *Germ.* superior, of three lobes inclosing the base of the style. *Stigma* simple, or slightly incrassated.

SPEC. CHAR. Umbel loose, irregular, with numerous spheroidal bulbs. Leaves broad, linear-acuminate, deeply carinate, with carinate sheath and rough edges and keel. Inclosed root-bulb compound, of few [2] divisions. *Spatha* long-pointed. Perianth trigono-ovate; its leaves connivent, rough, minutely apiculate. Filaments with an incurved apex when young: alternate ones dilated, trifid; united part longer than the antheriferous point. Anthers exserted.

SYN. Allium Halleri. *Bab. Man. Brit. Bot.* 305. (excl. syn.)

BESIDES the cursory notice in the *British Flora, ed. 5. p.* xxxviii., we find no record of our plant except in the *Manual of British Botany*, unless the larger figure of the cut of *Allium montanum bicorne*, &c. in Rudbeck's *Campi Elysii, v. 2. p.* 155. was taken from it. Our figure was drawn from the produce of bulbs brought by Mr. Eagle from the neighbourhood of Grade and Ruan Minor, Cornwall. We have seen the plant there in great luxuriance, but only in or near old orchards, though we could not learn that the inhabitants make any use of it. In Ireland it is probably a true native, Mr. W. MacCalla having found it near Roundstone, Galway, and in the

South Isles of Arran, and communicated it to the friend whose name we wish it to bear, the name of Haller having been attached to another species by Mr. Don, in *Mem. Wern. Soc.* v. 6, published in 1832. We have had both Cornish and Irish specimens in cultivation since 1842, and we believe the species distinct, although allied to *A. Scorodoprasum*, and still more nearly to *A. Ampeloprasum*, (of which it is certainly possible that it may be but a bulbiferous variety,) and in some points to *A. Hallerii*, Don, and *A. Porrum*.

It is a much larger plant than *A. Scorodoprasum*, the scape being 4–6 feet high, and thick in proportion from the size of a swan-quill to that of the human thumb in the lower part, where it is often compressed or obscurely angular; it tapers upward, and is often much waved. The leaves are more numerous, 6–10, of a greyer green, broader, sometimes two inches wide at the base of the blade, which partially clasps the scape, more deeply carinate, and gradually attenuated to the laterally compressed apex. The spatha has a linear compressed point, sometimes two inches long. It sometimes falls off, as the head expands, in one inflated calyptriform piece, and sometimes splits into two unequal pieces which are often persistent. The flowers are pale reddish purple, about as large as in *A. Scorodoprasum*, but more conical, their leaves but slightly expanding, and rougher on the outside. The stamens overtop the perianth by twice or thrice the length of the anthers, which are pale, and often appear imperfect; the style is usually protruded beyond them, and the stigma not incrassated. The united part of the trifid filaments tapers a little from the base, and is scarcely twice as long as the point that bears the anther. The germen is longer than in *A. Scorodoprasum*, and the transverse lines are nearer its base, and the portions below them more deeply excavated. The head-bulbs are green or pale purplish, the largest scarcely smaller than a hazel-nut. Lengthened stalks supporting small secondary heads are more generally present, and sometimes occur of several inches long. The bulbous base of the plant is very different, being of a globose shape, with solid white bulbs (two in the specimens that we have examined), seated upon the hard white crown of the root, and inclosed within the striated filmy bases of the leaf-sheaths, as large in the flowering season in full-sized plants as a walnut, and increasing ultimately to twice the size, gibbous outwardly,

the inner side compressed and channeled, clasping the base of the scape. These at length become separate by the decay of the connecting root-stock, and from the centre of each arises a plant for the ensuing year, the bulbous base of which is covered with greyish ragged films, the attenuated remains of the former bulb. There are also a few stipitate yellow-brown offsets, flat on one side, rounded on the other. The keel of the leaf-sheath varies in prominence. The incurved apex of the young filament at its junction with the anther seems peculiar.

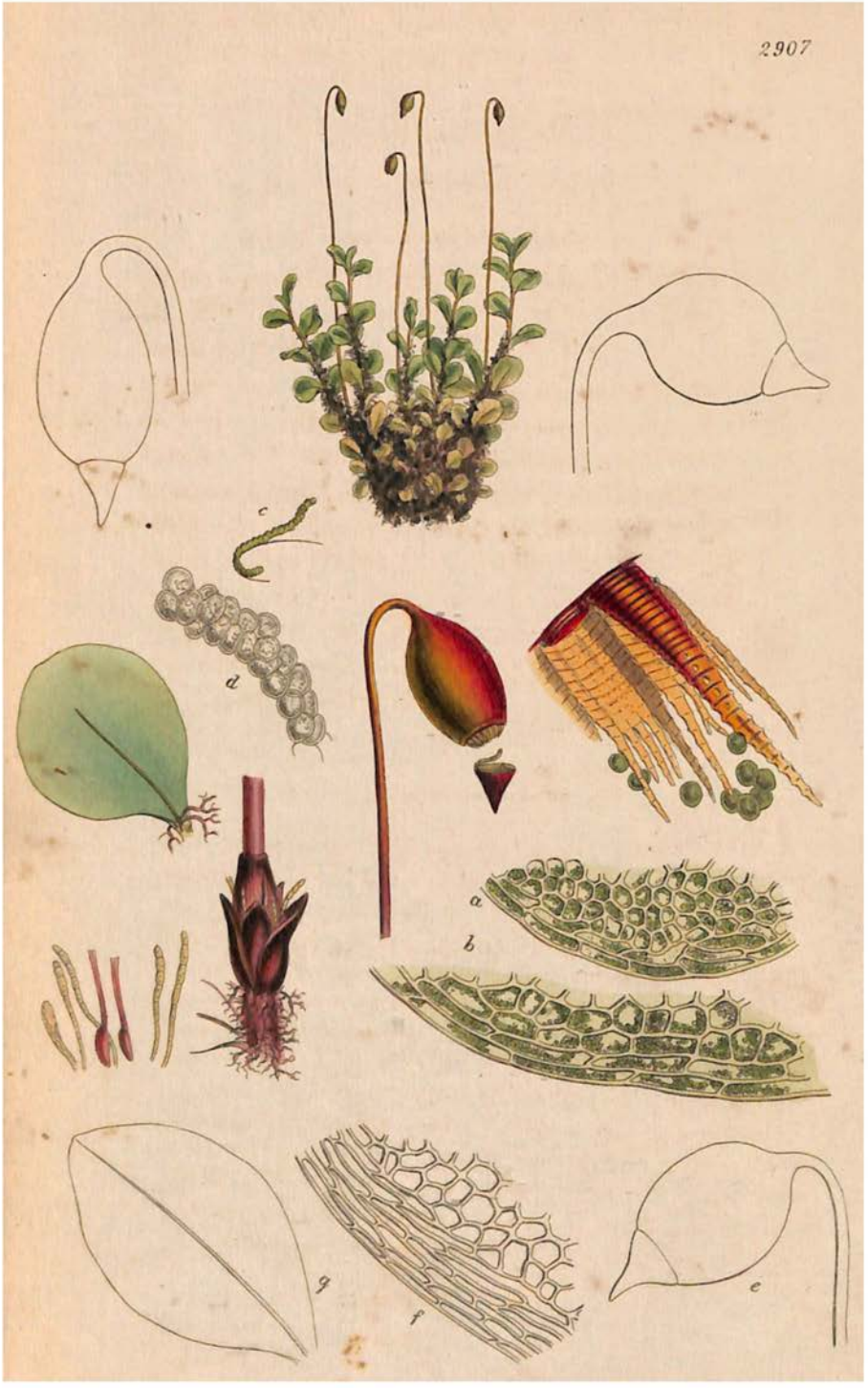
In *A. Ampeloprasum*, which equals or exceeds *A. Babingtonii* in size, the structure of the bulb is the same, except that we have found the inclosed bulbs three or four instead of two. In the leaves and scape there is absolutely no difference. The spatha we have not seen other than single, calyptriform, and caducous. The flowers are rather larger and more open, less rough on the outside, and their leaves subemarginate. They form a lax round head, generally without bulbs among their long stalks; but Mr. Babington has seen bulbs, on wild plants in Guernsey, about the size of a pea. The stamens are longer in proportion to the perianth, the style shorter. The anthers are larger and more yellow; the trifid filaments so deeply cut that the united part is not, or scarcely, longer than the antheriferous point. The germen is more globular, the nectarial projections are about its middle, and the spaces below less deeply excavated.

A. Hallerii, Don (*A. Ampeloprasum* of the *Fl. Græca*) and *A. Porrum*, both commonly cultivated under the name of *Leeks*, are mostly smaller plants with compact round heads of trigono-globose flowers, usually white with green keels. The stamens, even at an early stage, are recurved over and between the leaves of the perianth, and exserted as far as the division of the trifid filaments, the united part of which is longer than the fertile point, and nearly parallel-sided. The anthers, yellowish in *A. Porrum*, are purplish in *A. Hallerii*, whence the whole head has a purple tinge. The lines of the nectary are about the middle of the germen, and the spaces below, especially in *A. Porrum*, scarcely more concave than the furrowed portions above. The head-bulbs are generally wanting, very small when present, in both. *A. Hallerii* agrees with *A. Babingtonii* and *A. Ampeloprasum* in the structure of

the root-bulb, except that its divisions appear to be more numerous. *A. Porrum* is almost cylindrical in the lower part of the plant; the bases of its leaf-sheaths are very fleshy, and no inclosed bulbs are perceptible, in the flowering-season at least, so that a section presents the appearance of a simple tunicated bulb.

Our plant has been taken for Haller's No. 2, the *A. Scorodoprasum* β of Linnæus, *A. Scorodoprasum* (as we have already observed) of many later authors, and *A. Ophioscorodon* of others. We are unacquainted with that plant, having never seen it living; but it is impossible that ours could be supposed, as that has been, a mere variety of *A. sativum*.

The true *A. carinatum* of Linnæus has uniform simple stamens, and is allied to *A. oleraceum* and to *A. carinatum*, Smith, and still more nearly to *A. flexum*, Wald. and Kit., which Koch (*Syn. ed.* 2. *p.* 832), incorrectly as we think, regards as the same. It is well described by Fries (*Nov. Fl. Suec. ed.* 2. *p.* 86), and figured by Reichenbach (*Icon. Bot. t.* 416). Fries finds it at Wram in Scania, the place mentioned by Linnæus in his *Fl. Suec.* We have no reason to believe it a native of our islands.—W. B.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2907.

BRYUM Mnioides.

Mnium-like Bryum.

CRYPTOGAMIA Musci.

GEN. CHAR. *Fruitstalks* lateral. *Peristome* double: outer one of 16 teeth; inner, a membrane cut into 16 equal segments, and usually with intermediate filiform processes. *Calyptra* dimidiate.

SPEC. CHAR. Stems densely tufted, erect. Leaves spreading, roundish-obovate, blunt, the margin composed of elongated cellules, nerve ceasing below the point. Capsule pendulous, roundish-elliptical. Lid conical, with a short oblique beak. Pistils and anthers united in the same flower.

SYN. Mnium pseudo-punctatum. *Bruch and Schimper's Remarks on Drummond's Musci Americani, no. 253. in Lond. Journ. Bot. Dec.* 1843.

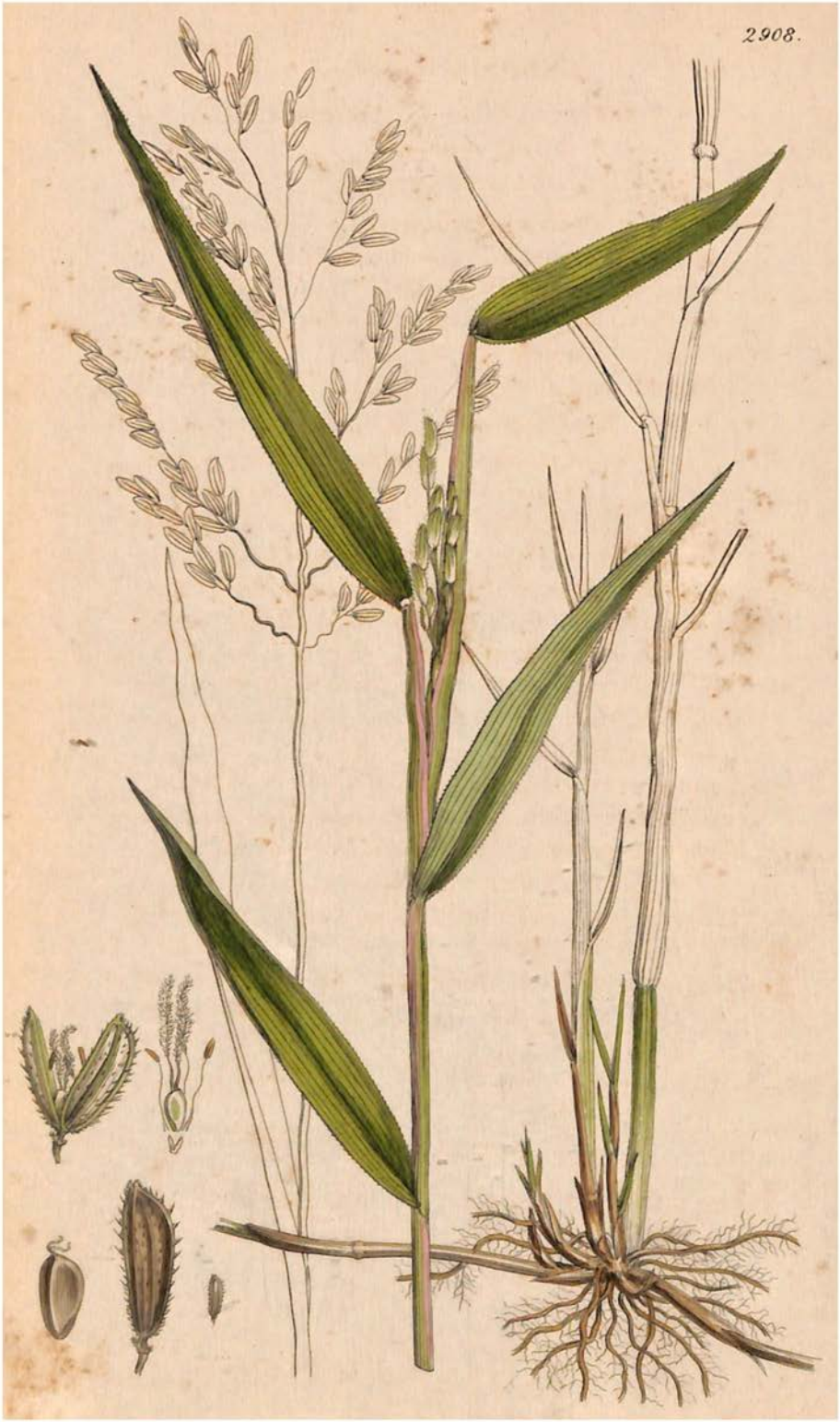
B. punctatum. *Hook. ibid.*

TO Mr. John Nowell, an intelligent operative of Todmorden, the fortunate discoverer in Britain of *Cinclidium stygium*, we also owe this exceedingly interesting addition to our list of British Mosses, hitherto known only as a native of North America. He sent it to us as a remarkable variety of *Bryum punctatum*, and as such has known it for several years, growing in wet boggy places on Stansfield Moor, near Todmorden, ripening its capsules in March. It grows also with the *Cinclidium* near the Malham Tarn.

This moss greatly resembles *Mnium punctatum*, but is less robust, with more delicate foliage, and smaller capsules. Stems erect, crowded, matted together with copious dark purple rooting fibres, three inches in height, the fertile stems producing innovations immediately below the uppermost or

perichætial leaves; hence differing essentially from the genus *Mnium* as defined by Bruch and Schimper. Inflorescence hermaphrodite in nearly all our numerous specimens; but in those gathered in June last a few examples occur, in which, as in those of Drummond, we find also perigonia containing no pistilla. In both the vaginula of the fruitstalk is surrounded with pistilla (*archegonia*, Br. and Sch.), and also antheridia intermixed with yellow club-shaped jointed filaments (*paraphyses*). Leaves widely spreading, rather few and distant, shorter, rounder, and paler than those of *Mnium punctatum*, very obtuse, not pointed, border not thickened nor cartilaginous, but formed of one or two series of elongated cells, larger than those of the pagina, the nerve always ceasing below the apex. In age the leaves acquire a reddish tint. Fruitstalk mostly solitary, sometimes two together, $1\frac{1}{2}$ inch long, curved at the summit, and gradually thickened towards its junction with the reddish-brown capsule, which is shorter and rounder than that of *Mnium punctatum*, and its mouth more contracted. Outer peristome of a dark reddish colour, the teeth converging and frequently perforated. Inner peristome rather shorter, of a tawny orange colour, the segments perforated, and the intermediate cilia in pairs. A yellow fragile annulus, composed of loosely cohering and very turgid cells, surrounds the base of the peristome. Seeds large, round, green. Operculum less than half the length of the capsule, conical, with a very short beak inclined to one side.

In order to illustrate this moss more completely, we have given highly magnified dissections: (*a*) represents a portion of the upper part of a leaf; (*b*) margin near the base of the leaf; (*c*) annulus; (*d*) the same, more highly magnified: (*e* and *f*) capsule and leaf of *B. punctatum*; (*g*) portion of the leaf more highly magnified.—W. W.



2908.

LEERSIA oryzoides.

European Leersia. Cut-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Spikelets* 1-flowered. *Cal.* 0. *Cor.* of 2 compressed herbaceo-membranous valves of nearly equal length; exterior one much wider, boat-shaped. *Seed* free within the dried corolla.

SPEC. CHAR. Panicle effuse; ramuli not appressed. Floret semi-elliptical, strongly ciliated, triandrous. Leaves very rough. Ligule short.

SYN. Leersia oryzoides. *Swartz Prod. Veg. Ind. Occ.* 21. *Fl. Ind. Occ. v.* 1. 129. *t.* 4. (flower.) *Willd. Sp. Pl.* 325. *Pers. Syn. v.* 1. 73. *Kunth Enum. Pl. v.* 1. 5. *Host Gram. Austr. v.* 1. 27. *t.* 35. *Fl. Dan. t.* 1744. *Schrad. Fl. Germ. v.* 1. 176. *Dec. Fl. Fr. v.* 3. 11. *Gaud. Agrost. Helv. v.* 1. 3. *Fl. Helv. v.* 1. 141. *Bert. Fl. Ital. v.* 1. 335. *Koch Syn. ed.* 2. 900. *Reich. Fl. Ex. v.* 1. 33. *Agrost. Germ. f.* 1495. *Nees ab Esenb. Gen. Germ. v.* 1. *t.* 1.

Asprella oryzoides. *Lam. Ill.* 167. *Röm. et Schul. v.* 2. 226. *Rafn Danm. og. Holst. Fl. v.* 1. 503.

Homalocenchrus. "*Mieg Act. Helv. v.* 4. 317." *Hall. Stirp. Helv. v.* 2. 202.

H. oryzoides. *Poll. Fl. Pal. v.* 1. 52. *Allion. Fl. Pedem. v.* 2. 232.

Phalaris oryzoides. *Linn. Sp. Pl.* 81. *Schreb. Gräs. v.* 2. 6. *t.* 22. *Krock. Fl. Siles. v.* 1. 82. *t.* 18.

Ehrhartia clandestina. *Weber* (nominally *Wiggers*) *Prim. Fl. Holsat.* 63.

DISCOVERED, for the first time in Britain, late in September 1844, at Henfield, Sussex, where it grows in several

places within the edges of marsh-ditches in the "Level," the open marshes drained by the river Adur. It was then in seed: at the same season this year, 1845, it was scarcely in flower. It occurs in various parts of Europe, most commonly in the South, and in Asia, and in America. Excluding the rare Bohemian grass *Coleanthus* (or *Schmidtia*), which Kunth (*Enum. v.* 1. *p.* 204) and Woods (*Trans. Linn. Soc. v.* 18. *p.* 29) place among the *Agrostideæ*, it is the only species of the *Oryzeæ*, or *Rice* family, indigenous to Europe.

Root horizontal, strong, white, branched, jointed. Stems mostly in tufts, and erect from the very base, bent a little at the joints, and throwing out radicles from some of the lower ones, about 2 feet high, slender, cylindrical, smooth, simple, or with a few upright branches; knots small, covered with deflexed hairs, upper ones concealed by the leaf-sheaths. Leaves spreading, flat, 4–8 inches long, nearly $\frac{1}{2}$ an inch wide, tapering to a sharp point, glaucescent, at length yellowish green, with 3 or 5 slender nerves on each side of the stronger central one, striated, very scabrous on both sides; bristles of the edges pointing forwards on the upper part of the leaf, and, except in the uppermost leaf, deflexed towards the base; uppermost leaf (in our plant, not in our foreign specimens) scarcely one-third as long as the one next below it, and more suddenly acuminate, at length horizontal. Leaf-sheaths shorter than the leaves, strongly striated, scabrous, reddish; two uppermost inflated, inclosing the panicle. Ligule short, truncate, toothed. Panicle lax; rachis obsoletely angular, roughish, much waved and curled, especially in the branches: branches with a minute tuft of loose white hairs at their base, simple or but little subdivided, lower ones binate; ramuli alternate, short, articulated to the short subclavate hispid pedicels of the spikelets. Floret compressed, ribbed, half-elliptical, minutely beaked, membranous and colourless, except a green stripe at each nerve; valves carinate, separating but slightly at the apex; outer one broad, with 5 nerves, those at the keel and margins strong and strongly ciliated, intermediate fainter, with bristles on them scarcely stronger than those sprinkled over the rest of the surface: inner valve linear, but little longer than the other, less than a quarter as wide, with a strong ciliated nerve at the keel, and two others, faint and naked, near the inflexed filmy

margins. Nectary-scales minute. Germen obliquely subovate, bearing on the summit of its inner edge two styles shorter than the plumose stigmas: the hairs of these branched. Seed inclosed in the dried but otherwise unaltered corolla, pale brown, obliquely obovate, compressed, with a shallow linear furrow on its back.

The erect position of the stems depends perhaps on the support of the surrounding herbage: planted in dry soil they become decumbent and root at the joints. In our British plants the panicle is sessile, or slightly stalked, within the leaf-sheath, a few flowers only emerging, and those soon falling off. In southern climates, and in unusually warm seasons further north, it rises more or less completely from the sheath, sometimes considerably above it. We give in outline such a specimen from Switzerland. In such cases, the stamens and stigmas, included in our plants, are sometimes exserted. In *Fl. Dan.* the stamens are represented, as we find them, short and included; in Host's figure they nearly equal the flower-valves, but are still included; in Von Esenbeck's they hang out of the flower. Schreber observes, and Schrader and Gaudin confirm the observation, that the inclosed flowers only are fertile: in some of our foreign specimens all the flowers of the exserted panicles seem to be male; in others many of them have germens, some considerably advanced and apparently perfect.

This grass, joined by Linnæus to *Phalaris*, was separated as a genus, before 1768, by Mieg, a Swiss botanist, and called *Homalocenchrus*. Next, G. H. Weber, in 1780, bestowed on it the generic name *Ehrhartia*, and the apt specific designation *clandestina*, in an academical dissertation published under the name of Wiggers. His description is good, except that he describes the flowers as gynandrous. His appellation however has been neglected, and Thunberg universally followed, who, in 1794, gave the name *Ehrharta* to a genus of Cape grasses. The name *Leersia*, given by Solander in a MS. now in the British Museum, was first published by

Swartz, in his *Nova Genera et Species Plantarum, seu Prodromus,* &c. in 1788. Palissot de Beauvois is mistaken therefore in asserting (*Agrost. p.* 3) the priority of Schreber's significant name *Asprella,* given in his edition of the Linnæan *Genera Plantarum* in 1789.

We adopt an English name from the Americans.—W. B.

SAXIFRAGA cæspitosa γ. *incurvifolia.*

Curve-leaved Tufted Saxifrage.

DECANDRIA. Digynia.

GEN. CHAR. *Calyx* 5-cleft, superior or inferior. *Petals* 5. *Styles* persistent. *Capsule* 2-celled with 2 beaks, opening by a pore between the beaks.

SPEC. CHAR. Barren shoots erect or procumbent. Leaves 3–5-cleft, with a broad-ribbed but not furrowed base, fringed with jointed hairs; lobes elliptical or linear-lanceolate obtuse. Stem-leaves few. Flowers 1–5 or more. Calyx half inferior, deeply divided into ovate obtuse sepals. Petals oval or oblong, 3-nerved; nerves simple.

α. Small. Flowers 1–3.

SYN. Saxifraga cæspitosa. *Eng. Bot. t.* 794.

β. *decipiens.* Larger. Flowers 3–9.

SYN. S. cæspitosa β. *Sm. Eng. Fl. v.* 2. 274.
S. decipiens. "*Ehrh. Beitr. v.* 5. 47. and 175." *Sternb. Saxifr.* 55. *t.* 23.
S. palmata. *Eng. Bot. t.* 455.

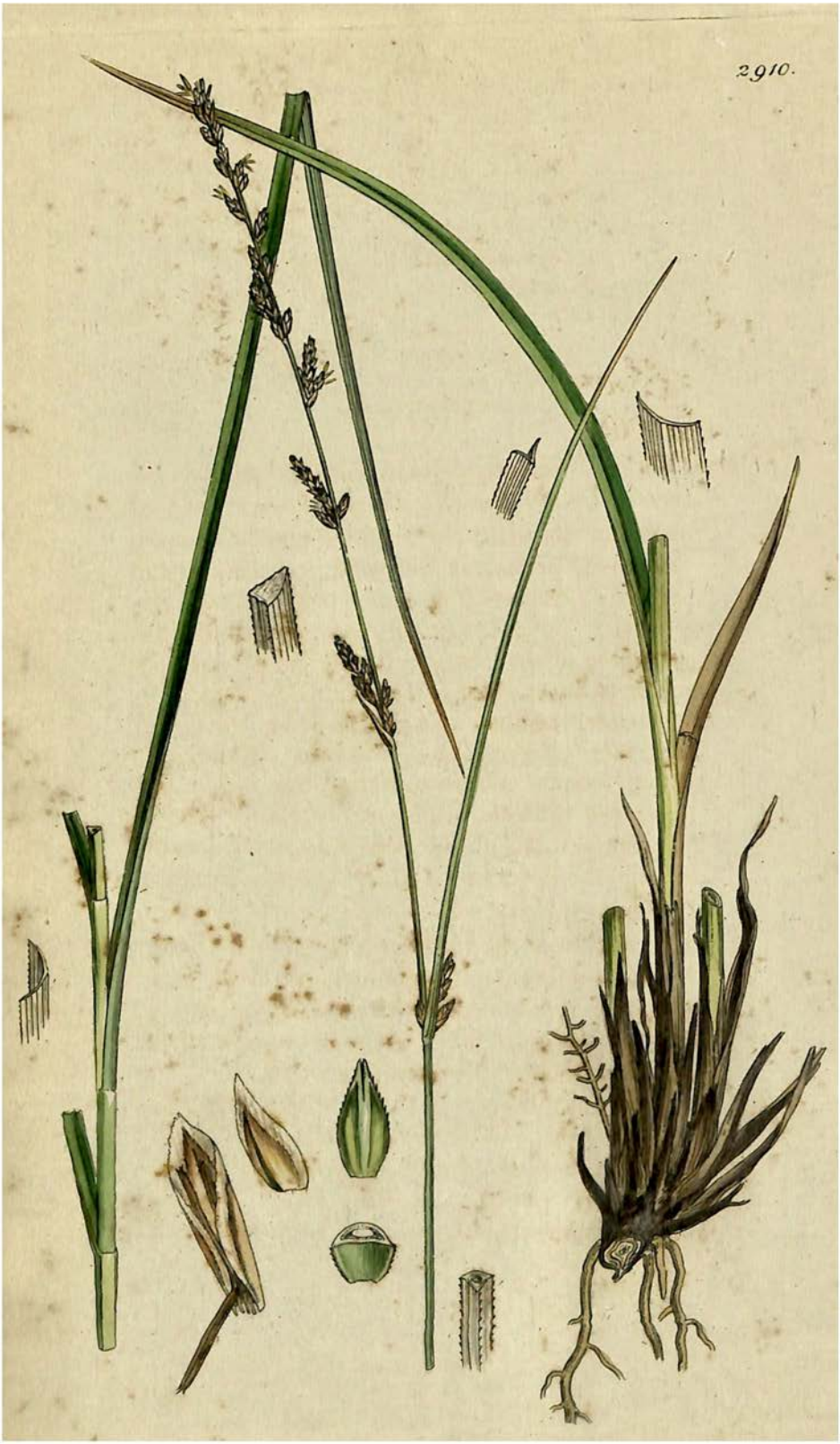
γ. *incurvifolia.* Stem-leaves more numerous; lobes incurved.

SYN. S. cæspitosa β. incurvifolia *Mack. Cat. in Trans. Roy. Irish Acad. v.* 14. 141.
S. incurvifolia. *D. Don. in Trans. Linn. Soc. v.* 13. 423. *Sm. Eng. Fl. v.* 2. 276. *Hook. Br. Fl. ed.* 3. 200. *Lindl. Syn.* 69. *Ser. in DeCand. Prod. v.* 4. 32. *Sternb. Saxifr. Suppl.* 78.

THE plant represented upon the annexed plate being one of those with which most botanists are totally unacquainted, and having long held specific rank in botanical works, not so

much from any claims which it can present to that position, as from an acquaintance with it being attainable solely from the description published by the late Prof. Don, and the deference so justly due to an opinion expressed by him, it has been thought advisable to include it in this work. It was originally gathered by Mr. J. T. Mackay, in 1805, on the summit of Brandon Mountain in the county of Kerry, in company with the true *S. cæspitosa*; and, having cultivated them ever since, he states in his *Fl. Hibern.* (*pt.* 1. 68) that he "can now see no difference between them, unless the incurved leaves of the atter (*S. incurvifolia*) should constitute it a variety, the notching of the petals not being constant." This plant appears indeed to agree with the larger forms of *L. cæspitosa* in all respects except the incurved leaves, more leafy stem, and rather less obtuse sepals, and it possesses the peculiarly rounded and broad base to the germen so characteristic of that species. Under these circumstances a detailed description is unnecessary.

The specimen from which the drawing has been made was obtained from the garden of Mr. Edward Forster, V.P.L.S., to whom we have been so often indebted for valuable assistance during the progress of this Supplement. Mr. Forster states that the root came originally from the county of Kerry. —C. C. B.



2910.

CAREX Boenninghausiana.

Boenninghausen's Carex.

MONŒCIA Triandria.

GEN. CHAR. *Flowers* in imbricated spikes, each covered by a glume. *Barren flowers* without calyx or corolla. *Fertile flowers* with a single, urceolate, persistent perigone inclosing a nut. *Style* 1. *Stigmas* 2 or 3.

SPEC. CHAR. Spike compound, elongate, slender, interrupted at the base; spikelets small, unequal, ovate or linear-oblong, simple or compound, polygamous, the upper ones simple, crowded above, but more distant and alternate downwards, wholly barren or fertile at the base only; the lower 1–4 elongate, simple, or composed of 2-8 alternate partial spikelets, fertile, or barren only at the top, the lowest with a long bractea. Stigmas 2. Fruit plano-convex, ovate-acuminate, slightly cleft, nerved on both sides, the nerves vanishing above, its edges blunt at the base, serrated from below the middle. Scales of the fertile florets about as long as the fruit, ovate, acute or mucronate, pale brown with a scarious margin.

SYN. Carex Boenninghausiana. *Weihe Regensb. Bot. Ztg.* 1826, 743. *fid. Koch et Kunze. Koch Syn. Fl. Germ. ed.* 2. 868. *Bab.! Man. Brit. Bot.* 337.

C. Boenninghauseniana. *Hoppe Caric. Ger. t. a.*

the proportion is much more equal and constant. This circumstance, if found to be uniform, might advantageously enter into the specific characters.

Some of the characters above mentioned as distinguishing our plant from *C. axillaris* may seem to bring it nearer to *C. remota*: but, though in slender stems, channeled leaves and lax spikes they have some agreement, and in weak plants of *C. Boenninghausiana* the habit is not very different, *C. remota* may be readily distinguished by its bright green herbage, its several foliaceous bracteas, its green spike with zigzag rachis and simple spikelets, its fruit longer than the scale, and, above all, its inferior barren florets. *C. Boenninghausiana* is in fact much more likely to be confounded with *C. paniculata*, agreeing as it does with that species in habit and in the scarious appearance of its subunisexual spikes; and, without attention to its slenderer, far laxer spikes and foliaceous lower bractea, it might readily be overlooked as a small variety of it. But in spite of its habit, the form of its fruit shows that the real affinity of *C. Boenninghausiana* is with *C. axillaris* and its allies *.

On account of the position of the barren florets, we quote with less hesitation the synonyms of Weihe, Reichenbach and Hoppe, than those of Koch, Kunze and Fries. But as Koch's *C. axillaris* differs from ours precisely in the same way, this circumstance may possibly be variable in both species. Indeed Gay expressly affirms this to have been the case in the only spike of *C. Boenninghausiana* that he had examined; though, being a submasculine one, its evidence cannot be altogether relied on. However it seems not improbable that two distinct

* The present characters of the section *Remotæ* are of unwieldy length. With a view to their abridgement we would suggest a selection of some of the most marked peculiarities enumerated below.

Gen. Carex. Subg. Vignea. Sect. Remotæ.

Spiculæ androgynæ in spicâ interruptâ simplici vel subcompositâ longe bracteatâ dispositæ. Stigmata duo. Radix stolonibus destituta.

1. *C. remota.* Radice laxe cæspitosâ, culmis strictis, foliis deorsum canaliculatis, bracteis mediis foliaceis, spicis laxissimis flexuosis subæquisexualibus, spiculis simplicibus infernè masculis, fructibus squamam vix marginatam superantibus.

2. *C. axillaris.* Radice laxe cæspitosâ, culmis strictis, foliis margine planis, bracteis mediis setaceis, spicis rectis densiusculis subæquisexualibus, spiculis superne masculis imis digitatim compositis fructibus squamam margine angusto pallentem superantibus.

3. *C. Boenninghausiana.* Radice densissime cæspitosâ, culmis declinatis, foliis canaliculatis, bracteis mediis glumaceis, spicis rectis deorsum laxis subunisexualibus, spiculis superne masculis imis alternatim compositis, fructibus squamam margine lato scariosam æquantibus.

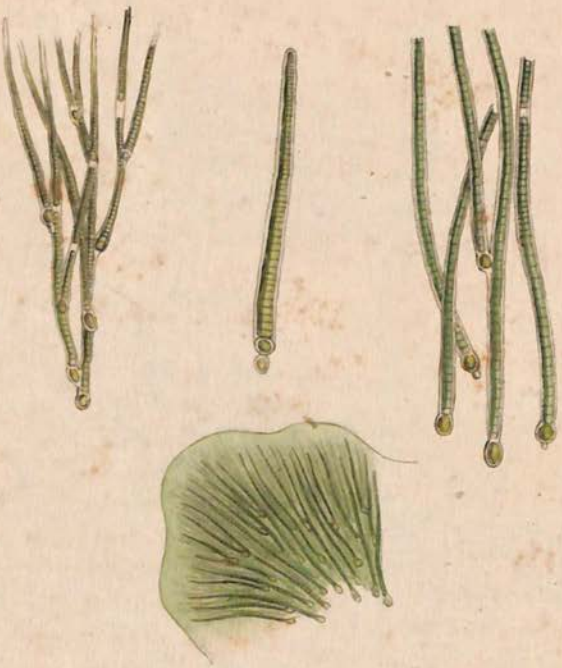
species may be confounded under this name; since the figures in Kunze, stated to be taken from the specimens of Weihe, bear little resemblance to that from Ohmueller or to our own; while they better agree with a specimen from Reichenbach in the herbarium of Dr. Boott.

The *C. lidibunda* of Gay (*Ann. des Sc. Nat.*) approaches in many respects to our plant, and indeed is suspected by the author himself to be a variety of *C. Boenninghausiana*. It differs in its flat leaves, setaceous lower bractea and crowded spike of 30–58 ultimate spikelets, (ours never having more than 40,) as well as in the "sexuum ludicra dispositio:" yet his account of its habit and many minor particulars is so happily descriptive of our plant, that we can scarcely believe them really distinct.

Root (rhizoma) without stolons, with many short and intricate branches forming a very dense tuft, and furnished with many stout and woody brown fibres. Stems numerous, 2–4 feet high, slender but firm, not erect but spreading outwards from the centre of the tuft: round at the base and solid; upwards bluntly triangular and smooth-edged; but above the middle sharply triangular, hollow, with rough edges and rather convex striated interstices: the part bearing the spike straight, irregularly angular with two rough edges. Leaves about $\frac{3}{20}$ in. broad, channeled and rough-edged throughout, with a triangular point; the keel rough above the middle. Upper leaves nearly as tall as the stem, sheathing about a third of it. Lower leaves shorter; lowermost rudimentary and passing into dark brown striated scales which clothe the base of the stem. Bractea of the lowest spikelet usually leafy, channeled, with rough edges and keel, and somewhat longer than the spike, but sometimes short and setaceous. The second and third spikelets have sometimes short setaceous bracteas, the rest scales only. Spike slender, from 3–6 in. long, composed of from 10–16 nearly erect spikelets: those springing from the centre of the tuft have more fertile than barren florets, while those of the circumference have an excess of barren. The upper 4–10 spikelets are crowded, ovate or oblong-acute, about $\frac{1}{4}$ in. long and $\frac{1}{20}$ in. broad, often entirely composed of barren florets. Those occupying the middle of the spike are less crowded, with more fertile florets. The lowest 1–4 are widely separated and usually compound, with a still larger proportion of fertile florets, from $\frac{1}{2}$ in. to $1\frac{1}{4}$ in. long and $\frac{1}{6}$ in. broad; consisting of from 2–8 alternate partial spikelets, of

which the terminal one is much the largest, linear-oblong, and in the lowest spikelet almost wholly composed of fertile florets even when the general character of the spike is barren; as is the case at other times with the second and third spikelets also. Barren florets in general wholly above the fertile in the same ultimate spikelet; though rarely one or two barren florets are found mixed with the fertile. Scales of the barren florets closely imbricated, obtuse, persistent, brown with a broad scarious border and green nerve vanishing below the summit: those of the fertile florets more lax, narrower and more acute, the nerve often excurrent, pale brown with a white border. Fruit nearly erect: perigynium $\frac{1}{10}$ in. long and $\frac{1}{23}$ in. broad, plano-convex, ovate, acuminate, slightly cleft at the point, opake, pale brown and often dotted; about 8-nerved in front, with the exterior nerves converging; 3–5-nerved at the back; all the nerves vanishing above: its edges blunt at the base, serrated from below the middle nearly to the point. Achenium attenuated below and tipped with the base of the style. Stigmas 2, more than half included within the perigynium. Stamens 3, their anthers tipped with a corona.

Our figure is taken from a specimen gathered in Balls Wood, two miles south-west of Hertford, in July 1843. For the chief part of the character we are indebted to Dr. Boott, who has also furnished us with much valuable assistance in the synonymy and description.—W. H. Coleman.



2911.

RIVULARIA plicata.

Capt. Carmichael's Rivularia.

CRYPTOGAMIA Algæ.

GEN. CHAR. *Frond* fleshy or gelatinous, composed of radiating filaments articulated within, surrounded by gelatine, and springing from a globose or elliptic base.

SPEC. CHAR. Fronds rather large, densely gregarious, compresso-plicate, often hollow and ruptured, dark green; filaments spuriously dichotomous, attenuated.—*Harv.*

SYN. Rivularia plicata. *Carm. MSS. Harv. Man.* 151.

Lichenoides, &c. *Dillen. Musc. t.* 19. *f.* 19. *Raii Syn. ed.* 3. 478.

Lichen corrugatus. *Dicks. Fasc.* 4. 26.

Collema corrugatum. *Ach. Lich. Un.* 642. *Syn.* 318. *Hook. Eng. Fl. v.* 5. *pt.* 1. 210.

ON the muddy shore of the Chichester Creek near Dellquay, Mr. Jenner; Ilfracombe, Mr. Ralfs; from which localities we received our specimens. Other stations are mentioned in Harvey's *Manual.*

Fronds from one line to half an inch in diameter, crowded and distorted, of a firm gelatinous substance, at length often hollow and ruptured, dark green. Filaments springing from an elliptic base, arranged dichotomously, attenuated, but rather obtuse at the apex, filled with rings, which are nar-

rower in the young filaments than in those which are more advanced. The young threads are also less attenuated.

The synonyms of the present Alga were first ascertained by Mr. Borrer, from the examination of a specimen given to him by Mr. Dickson; and Mr. Jenner's specimens are from the original station of Dillenius. As a species it is quite distinct from all others in its peculiar habit and characters. The filaments are very slender, and shorter than in many species. The dissection is taken from Mr. Jenner's plant; the figure, of the natural size, from Mr. Ralfs's: *a*, the young plant; *b*, the old plant.—M. J. B.

Jan.y 1st 1847.

2912.

ELACHISTA flaccida.

Flaccid Elachista.

CRYPTOGAMIA Algæ.

Gen. Char. *Filaments* truly parasitic, springing with the oblong or obovate spores from a cellular base.

Spec. Char. Articulations with a central nucleus, much shorter than broad. Spores oblongo-obovate. Threads flaccid.

Syn. Elachista flaccida. *Fr. Fl. Scan.* 317.

Elachista breviarticulata. *Areschoug Linn. v.* 16. 234. *t.* 8. *f.* 5.

Conferva breviarticulata. *Suhr in Fl.* 1831. 32. *t.* 4. *f.* 36. *x*, *y*, *z*.

Conferva flaccida. *Dillw. Br. Conf.* 53. *t.* C. (not of *Engl. Bot. t.* 2310.). *Harv. in Hook. Br. Fl. v.* 2. *pt.* 1. 355. *Wyatt Alg. Damn. no.* 222. *Harv. Mann.* 132.

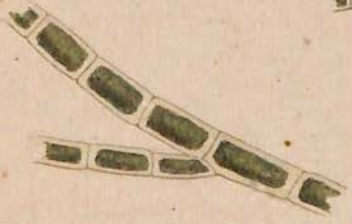
On *Cystoseira fibrosa*, Devonshire, Miss Hill, Mrs. Griffiths; Cornwall, Mr. Ralfs, who communicated our specimens.

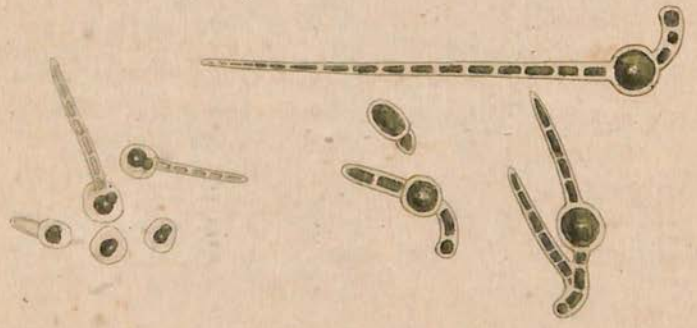
Growing in short scattered flaccid tufts on the frond of *Cystoseira fibrosa*, on which they are truly parasitic. Filaments olive-green, about half an inch long, arising from a little gelatinous globule, much attenuated below, obtuse above. Articulations in the middle of the thread $\frac{1}{2}$—$\frac{1}{3}$, as long as broad; the upper ones $1\frac{1}{2}$ as long as broad, slightly swollen

from being constricted at the septa; endochrome with a dark patch in the centre. Spores oblongo-obovate, darker than the threads, with a pellucid border.

This appears to be the plant described and figured by Dr. Areschoug, who has referred *Conferva flaccida*, Lyngbye and Agardh, to *Elachista fucicola*. However correct this may be as regards their Alga, *C. flaccida*, Dillw. is very different as will be seen by the present figure. I have another species, or form, with remarkably short articulations, from Mrs. Griffiths, which grows like the present on *Cystoseira fibrosa*; the present Alga is however nearest to Dr. Areschoug's figure, in which, it may be observed, the upper articulations do not accord with his specific character, and therefore some latitude must be allowed. The genus was proposed originally by Duby, and has been adopted by Fries in the *Flora Scanica*. *Conferva fucicola* and *curta* belong to it. *Elachista curta*, of which I have an authentic specimen from M. Lenormand, is not the same with our British species: it has far more the habit of *E. flaccida*. *Conf. flaccida*, *Engl. Bot. t.* 2310, is evidently *E. fucicola*, and quite distinct from what Dillwyn has figured.

A curious reticulated appearance is exhibited by the joints when the plant is first put into fresh water. The bubbles of gas are afterwards absorbed, and the apparent network vanishes.—M. J. B.





Jan.ʸ 1ˢᵗ 1847

2913.

STYGEOCLONIUM tenue.

Slender Stygeoclonium.

CRYPTOGAMIA Algæ.

GEN. CHAR. *Threads* extremely delicate, branched, gelatinous, articulated. *Endochrome* collapsing, and at length forming quaternate spores.

SPEC. CHAR. Filaments sparingly branched, elongated; extremities at first much elongated and pellucid. Articulations of the stem twice or thrice as long as broad; those of the branches rather longer than broad.

SYN. Stygeoclonium tenue. *Kützing Phycologia*, 253.

Draparnalida tenuis. *Ag. Syst. Alg.* 57. *Ic. Alg. Eur. no.* 38. *Harv. in Hook. Eng. Fl. v.* 5. *pt.* 1. 388. *Manual*, 122. *Hassall Freshw. Alg.* 123. *t.* 11. *f.* 2.

β. *elongata*. *Ag. l. c.*

SYN. Draparnaldia hypnosa. *Moug. & Nest. no.* 499.

Conferva protensa. *Dillw. t.* 67.

Conferva lubrica. *Dillw. t.* 57.

IN the rocky bottoms of rivulets, and also in standing pools. Found in many parts of Great Britain.

Filaments very slender, 2–6 inches long, sparingly branched with irregular or subalternate or occasionally somewhat fasciculate branches. Tips at first much elongated, extremely acute and pellucid, at length subacute. Articulations of the main stem two or three times as long as broad; of the branches rather longer than broad. Endochrome filling the internal

cell, or forming a transverse band, at length in certain joints, especially towards the apices, becoming transverse, and ultimately dividing into four distinct subelliptic spores.

Whatever general resemblance this plant and its congeners may have to *Draparnaldia*, I do not doubt that Kützing has judged very rightly in placing it in a distinct genus and even family. The fruit in *Draparnaldia* when present is external, as in *Chætophora*. Kützing, unfortunately, has not figured his *Draparnaldia ornata*, in which he has found the fruit abundantly. Mr. Thwaites has shown me the fruit of *Stygeoclonium* exactly as it is figured by Kützing, and in the plate from specimens communicated by Mr. Ralfs. Mr. Hassall indeed informs us that he has seen a quaternary division of the endochrome in other *Draparnaldiæ*, but he does not say positively that he has seen it in *Draparnaldia glomerata* and *plumosa*, or in any typical species. Should it really occur in them, it is highly improbable that they should also possess external fruit, nor indeed is it certain that it has been found except in *D. ornata*. It is at least clear that *D. tenuis* and *D. ornata* are not congeneric. Mr. Ralfs has observed that the present plant, when left for a time in water, forms a scum of molecules. Agardh has seen young plants growing from the scum. The bodies represented in the plate are germinating *spores*. In Mr. Ralfs's plant, which is Agardh's var. *β. elongata*, all the joints are completely filled with the endochrome; in those figured by Agardh and Mr. Hassall, the green matter forms a transverse central band. It should be observed that Mr. Hassall's *D. elongata* is quite different from Agardh's variety of *D. tenuis*.—M. J. B.

Ap. 1 1847

2914.

LAMIUM intermedium.

Intermediate Dead-nettle.

DIDYNAMIA Gymnospermia.

GEN. CHAR. *Calyx* bell-shaped, 5-toothed; teeth nearly equal. *Corolla* with its upper lip arched; lateral lobes of the lower lip minute, toothlike or obsolete, rarely elongated. *Anthers* approximating in pairs; cells diverging, bursting longitudinally.

SPEC. CHAR. Leaves obtuse, inciso-crenate; lower ones stalked; upper reniform-cordate; uppermost sessile, reniform-cuneate. Calyx-teeth longer than their tube, hispid, always spreading. Tube of the corolla naked within; lateral lobes of the lower lip with a small tooth. Nuts oblong.

SYN. Lamium intermedium. *Fries Nov. Fl. Suec. ed.* 1. 105. *ed.* 2. 192. *Reich. Iconog. t.* 722. *Fl. Germ. Excurs.* 321. *Benth. Lab.* 512. *Drej. Fl. Hafn.* 205. *Hook. Brit. Fl. ed.* 5. 257. *Bab. Man. Brit. Bot.* 233. *Walp. Rep. Bot. v.* 3. 804. *Koch Syn. ed.* 2. 648.

ALTHOUGH this plant was added to the list of our native species so recently as the year 1836, it is found to be very common throughout the greater part of Scotland, and has also been gathered by Mr. John Ball in the county of Sligo in Ireland. The credit of being the first British botanist who distinguished it from its allies is due to Dr. N. Tyacke, who introduced it to the notice of the Botanical Society of Edinburgh on the 12th May, 1836, and also then pointed out its distinctive characters. See the 'First Annual Report' of that Society, page 27.

It seems probable that this Dead-nettle has been passed by

most botanists as a luxuriant state of *L. purpureum*, and that those who have gathered it and examined its structure have given the credit to *L. amplexicaule* of producing such a strong and vigorous offspring. If however we carefully examine the three plants, we shall find that it is distinct from both of them. From *L. purpureum* it differs by its reniform-wedge-shaped uppermost leaves; the tube of its corolla with a very faint internal ring of hairs; and the teeth of the calyx longer than the tube of that organ: from *L. amplexicaule* by its uppermost leaves narrowing to their base so as to appear stalked; the shorter tube of the corolla; and the teeth of the calyx much longer, very rigid, and always spreading. In *L. incisum*, to which *L. intermedium* is very nearly allied, the uppermost leaves are cordate-rhomboidal, stalked, and scarcely wedge-shaped at the base; each lateral lobe of the lower lip of the corolla forms a strong prominent tooth; and the middle lobe is cordate, not transversely quadrate, or oval and emarginate, as in *L. intermedium*.

However difficult it may be to distinguish these plants upon paper, no one can see *L. intermedium* without being struck by its very different appearance; and indeed each of the four plants now mentioned is known at a glance by all who have been accustomed to see them in their native places.

Our present subject is a weed on cultivated land, and occasionally grows to a very large size, far larger than either of its allies. It flowers throughout the summer, but in the warmer and drier climate of the continent it is said not to be found after midsummer. The drawing was made from specimens gathered at Edinburgh on the 2nd of August, 1841. —C. C. B.

Apl 1 1847

2915.

HIERACIUM Lapeyrousii.

Lapeyrousian Hawkweed.

SYNGENESIA Polygamia-æqualis.

GEN. CHAR. *Heads* many-flowered. *Involucre* imbricated, with many oblong scales. *Receptacle* nearly naked. *Florets* all ligulate, perfect. *Fruit* terete, angular, furrowed, truncate above, not beaked, with a very short crenulated margin. *Pappus* pilose, rigid, brittle, scabrous.

SPEC. CHAR. Stem clothed with hairs, leafy. Radical leaves oblong-ovate or oblong-lanceolate, persistent; petioles winged, shaggy. Stem-leaves sessile, clasping, ovate, taper-pointed, all with small teeth or nearly entire, hairy beneath. Corymbose heads and upper part of the stem glandular-hairy.

SYN. Hieracium Lapeyrousii. *Froel. in DeCand. Prod. v.* 7. 232? *Bab. Man. Br. Bot.* 184.

STEM usually simple, 1–2 feet high, terminating in a corymb of few large heads, clothed with long scabrous or shortly feathered hairs intermixed with stellate pubescence throughout, the latter increasing in quantity upwards, and in company with black stalked glands thickly covering the petioles and lower part of the involucre. The radical leaves oblong-ovate or ovate-lanceolate, the lowermost often bluntish, the others generally acute, clothed with hairs springing from a bulbous base, which are numerous on the under side but thinly scattered upon the upper. Lower stem-leaves oblong-ovate, narrowing downwards to a clasping rather enlarged base, only

slightly hairy on the upper surface; upper ones ovate-attenuated, clasping, without hairs on the upper surface. Leaves all frequently more or less tinged with purple. Heads rarely exceeding four, sometimes solitary, large; involucre ventricose, covered with whitish stellate pubescence, long white hairs with a black base, and black stalked glands, its scales dark green, the margins paler and almost glabrous. The florets large, yellow. Receptacle fimbriated. Fruit dark brown or nearly black, angular, furrowed, scabrous. Pappus rigid, very brittle, light brown.

Not having seen authentic specimens of Froelich's plant, we are unable to state positively that it is the same as that now figured; but as our plant agrees more exactly with the description of his *H. Lapeyrousii* than with that of any other of the 188 species described by him in DeCandolle's *Prodromus*, it has been considered better to adopt this nomenclature, rather than to introduce a new name into this already overloaded genus. The present figure will enable botanists to identify the British plant, which was found in 1840 at Garra Head, in the county of Antrim, by Mr. David Moore, and in the upper part of Teesdale, both in Durham and Yorkshire, by the writer, in 1842. The specimen figured was gathered near Winch Bridge in Teesdale, on the 9th of August, 1843.—C. C. B.

Jan.ʸ 1ˢᵗ 1847

2916.

POA Parnellii.

Parnell's Meadow Grass.

TRIANDRIA Digynia.

GEN. CHAR. *Spikelets* of two or more florets. *Glumes* rather unequal, mostly shorter than the lowest floret. *Outer Palea* with three or five nerves, membranous below, scarious at the tip, compressed, keeled, unarmed. *Style* terminal, very short. *Stigmas* protruded from the base of the floret.

SPEC. CHAR. Panicle erect, large, rather close, oblong. Spikelets ovate. Florets two or three, acute, not webbed; outer palea with five nerves, the dorsal and marginal hairy. Upper sheath generally longer than its leaf; ligule very short and truncate. Upper joint at about the middle of the stem and exposed.

SYN. Poa Parnellii. *Bab. Man. Brit. Bot.* 368. *Parn. Brit. Grasses,* 210. *t.* 93.

A CAREFUL study of the more obscure tribes of British plants has already brought to light many well-marked species which had escaped the notice of former botanists. In the extensive order *Gramineæ*, to which the subject of this plate belongs, we are under great obligations to Dr. Richard Parnell, to whose honour the species now before us is dedicated. His work quoted above is an invaluable contribution to our knowledge of Grasses.

Poa Parnellii inhabits the limestone district of Upper Teesdale, which divides the counties of Durham and York. It is found near to the river Tees, from the Caldron Snout to near the Winch Bridge, but is more especially plentiful at the fine

waterfall named the High Force, usually growing in crevices of the rock. Mr. Borrer has found it also as low down the river as the confluence of the Greta.

Root perennial, cæspitose; producing numerous stems of a foot or more in length, which are slightly compressed, and smooth, and bear four or five leaves with smooth striated sheaths; the uppermost sheath is always, we believe, longer than its leaf, and is crowned with a very short and truncate ligule, the length of which is at least six times exceeded by its breadth. Several of the joints of the stem are usually uncovered, the uppermost always. Leaves flat, acute, rough at the edges. Inflorescence compound, panicled, rather close, with slender rough branches. Spikelets ovate, of two or three florets. Glumes unequal, acute, three-nerved, the midrib minutely toothed near its extremity. Florets not webbed, although occasionally one or two longer hairs may be taken for a web. Outer palea five-nerved, the dorsal and marginal nerves hairy on their lower half; the dorsal minutely rough at the summit; intermediate nerves faint, glabrous. Anthers long. Scales long, attenuated, each with a tooth on one side.

This grass is closely allied to *P. nemoralis* and several others, but the want of a web to its florets separates it from most of them, and its habit is very different. From *P. polynoda* of Parnell, its nearest ally, its fewer stem-leaves, short truncate ligule, spikelets of fewer florets, and more acute and more unequal glumes distinguish it.

Our figure was taken from specimens gathered by the High Force in Teesdale by Mr. Borrer in August 1845, where the plant was detected by the writer a few years previously and submitted to Dr. Parnell, who pointed out its claims to specific distinction.—C. C. B.

2917.

STATICE rariflora.

Remote-flowered Sea Lavender.

PENTANDRIA Pentagynia.

GEN. CHAR. *Calyx* 5-cleft, persistent, inferior, funnel-shaped, plaited, scarious above. *Corolla* 5-parted. *Capsule* not bursting. *Flowers* spiked.

SPEC. CHAR. Leaves oblong-lanceolate, mucronate, 1-ribbed, faintly nerved. Scape branched from below the middle; branches divided, panicled, ascending or incurved; ultimate subdivisions elongated, with unilateral rather distant flowers. Segments of the calyx acute with intermediate teeth. Outer bracts large.

SYN. Statice rariflora. *Drejer Fl. Hafn.* 121. *Henfrey in Phytol. v.* 1. 462 (with a figure). *Bab. Man. Brit. Bot.* 245.

S. Limonium bahusiensis. *Fries Nov. Fl. Suec. Mant.* 1. 10. *Mant.* 2. 17. (excl. syn.)

S. Limonium γ. *Sm. Eng. Fl. v.* 2. 116.

S. Limonium β. longifolia. *Henf. in Phytol. v.* 1. 463.

Limonium anglicum minus, caulibus ramosioribus, floribus in spicis rarius sitis. *Raii Hist. Plant. v.* 3. 247. *Syn. ed.* 3. 202.

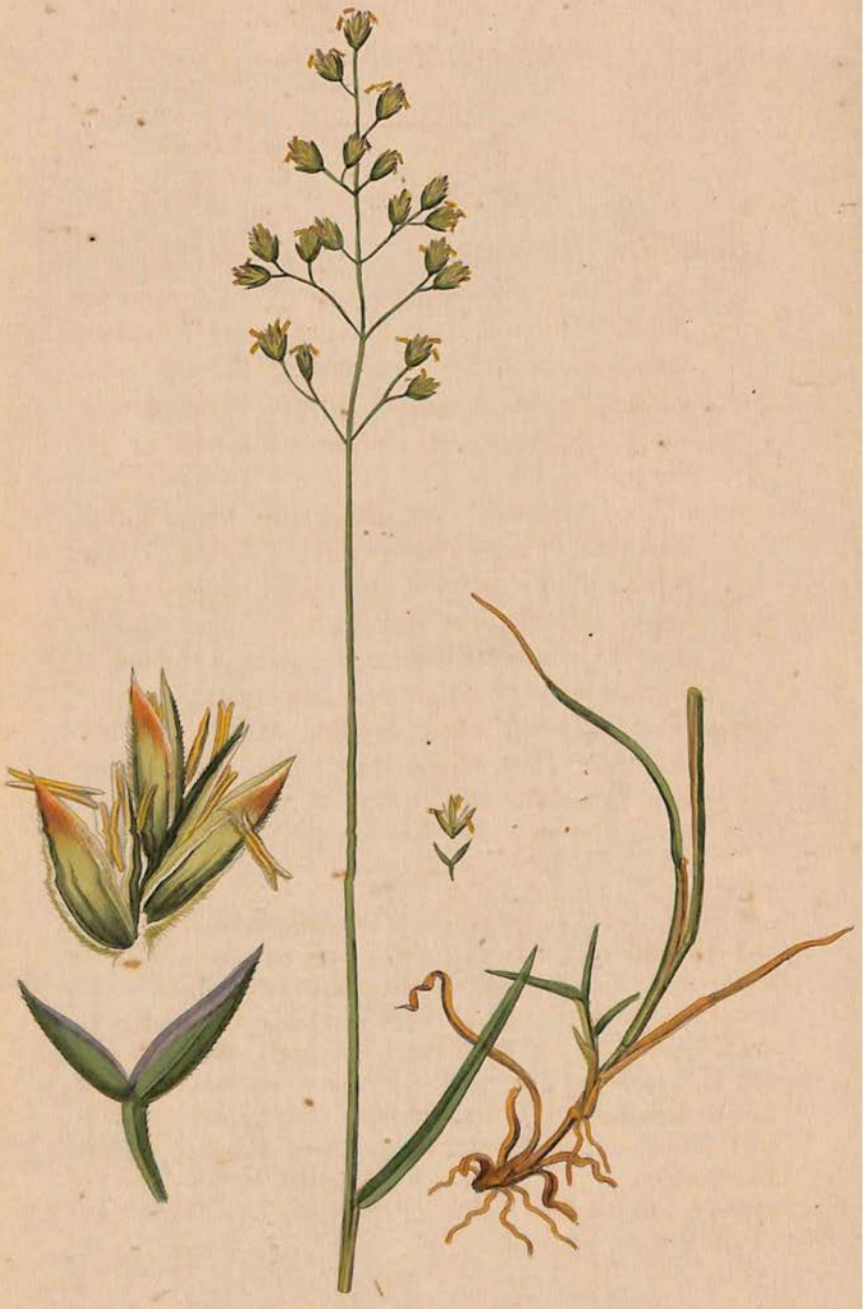
THIS beautiful plant, which had been confounded with the *Statice Limonium* from the time of Ray and Dillenius, was recalled to the attention of botanists by Mr. W. L. Notcutt, who found it "on the shore between Wicker Hard and Cams, on the border of Portsmouth Harbour," and also "by the side of Fareham Creek, from half a mile to a mile below

the town," in the year 1842. We are indebted to him and to Mrs. Robinson of Fareham, who found the plant near Fareham as long ago as 1840, for the specimens from which our figure is derived. It has also been observed on the coast of Wigton and Kirkcudbright shires in Scotland, and near Galway in Ireland by Prof. Balfour; near Tramore in the county of Waterford, Ireland, by Prof. E. Forbes; and by Chichester Creek (one of the stations recorded by Dillenius) by Mr. Borrer (in 1827); and by the Rev. W. W. Newbould. We have examined specimens from all these localities, and, although they differ slightly in appearance, believe them to belong to the same species as authentic examples of Drejer's plant now before us. We also consider it to be quite distinct from *S. Limonium* and from *S. spathulata* (*t.* 2663), which is erroneously referred to it by Fries.

S. rariflora agrees with *S. Limonium* in most respects, but differs in the following manner. Its stems branch from below their middle, and the subdivisions are erect or slightly curve inwards: in its ally the stems are simple to a much higher point, and the subdivisions turn outwards horizontally or even downwards, the whole forming a corymb. In the present plant the flowers are placed in distant pairs, or are solitary within two broad bracts; in the other, the clusters of flowers are closely imbricated upon the ultimate subdivisions of the stem. The figure, if contrasted with that of *S. Limonium* (*t.* 102), will give a better idea of these differences than any description can convey.

It is an inhabitant of muddy sea-shores, and is probably widely distributed upon our coasts: on the continent of Europe it is only known on the coast of Denmark, unless either of the new species described by Lloyd in his *Flore de la Loire Inférieure* is identical with it. We have seen no specimens of Mr. Lloyd's plants, and find it very difficult to determine them from the short descriptions.

It is a perennial, flowering in July and August.—C. C. B.



Apl 1st 1847.

2918.

POA Balfourii.

Balfour's Meadow Grass.

TRIANDRIA Digynia.

GEN. CHAR. *Spikelets* of two or more florets. *Glumes* rather unequal, mostly shorter than the lowest floret. *Outer palea* with three or five nerves, membranous below, scarious at the tip, compressed, keeled, unarmed. *Styles* terminal, very short. *Stigmas* protruded from the base of the floret.

SPEC. CHAR. Panicle erect, rather spreading. Spikelets ovate, of three or four webbed florets. Outer palea with five nerves, the dorsal and marginal hairy, intermediate indistinct. Upper sheath about as long as its leaf; upper joint in the lower third of the stem; ligule prominent and obtuse.

SYN. Poa Balfourii. *Parn. in Ann. Nat. Hist. v.* 10. 121. *t.* 5. *Brit. Grass.* 145. *t.* 66. *Bab. Man. Brit. Bot.* 367.

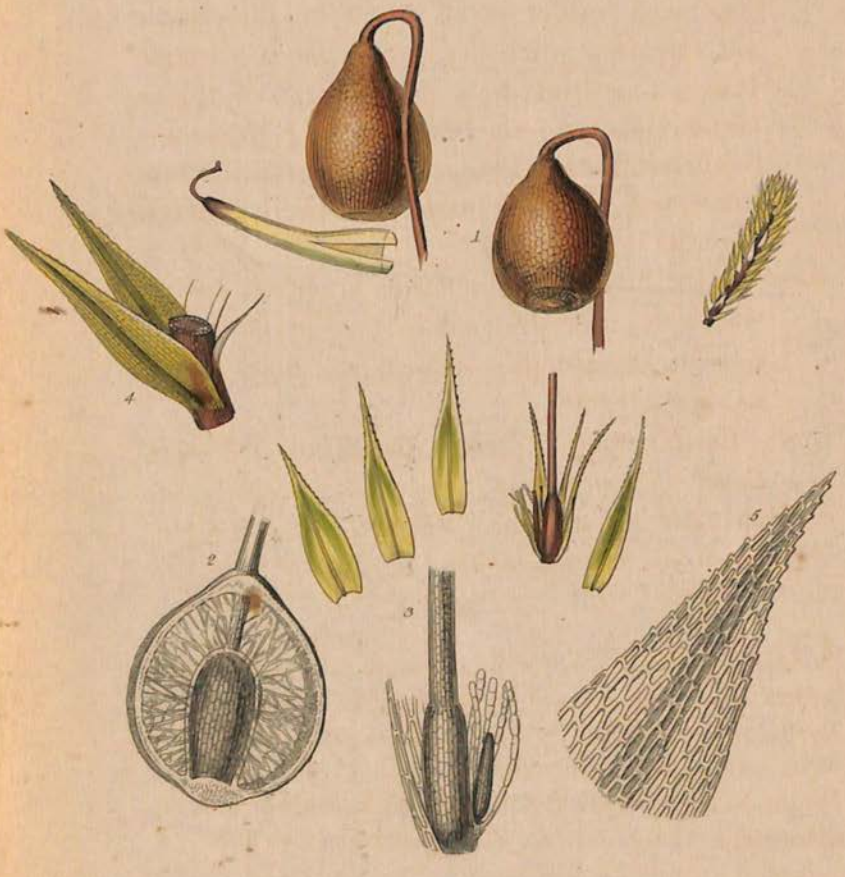
THIS grass is an inhabitant of lofty mountains in Scotland and the north of England, growing on a micaceous soil. It seems to prefer the steep slopes of crumbling rocks. The writer has gathered it upon Ben Lawers and the neighbouring lofty summits, and upon Ben Voirlich (the place where it was first noticed by Prof. Balfour) near the head of Loch Lomond, in Scotland; also in a steep ravine above the farm of Dunsdale in the Great Cheviot, Northumberland. Mr. Jas. Backhouse, jun., found it on the north-west side of Ingleborough in Yorkshire, and Dr. Parnell mentions Clova, For-

farshire, as another of its stations. The specimen figured was gathered on Ben Voirlich, on the 6th of August 1845.

Root creeping moderately. Stem from three to fifteen inches high, rigid, compressed, very slightly rough, bearing three or four leaves with roughish sheaths, the upper sheath about as long as its leaf, and crowned with a prominent obtuse ligule. Leaves all short, acute, nearly flat, slightly rough at the edges, so placed as to leave nearly two-thirds of the stem naked; the joints usually covered by the sheaths, but in luxuriant specimens from the north of England the upper joint is exposed. Inflorescence more or less compound, or occasionally simple. Panicle erect, one to three inches long; its branches more or less spreading, short, rough, the lower ones usually in pairs. Spikelets erect, ovate, of three or four florets, the top of the lowest floret on a level with the apex of the larger glume. Glumes rather unequal, acute, three-ribbed, the midrib rough on its upper part, margins membranous. Lower florets webbed at the base. Outer palea five-nerved, the dorsal and marginal nerves hairy, especially in their lower part; intermediate nerves faint, glabrous. Anthers long.

The size of the panicle varies greatly, being sometimes nearly simple, at others slightly compound and patent, or much more compound and rather close. The English specimens are more luxuriant than those from Scotland, and have more frequently long many-flowered panicles. In them the upper leaf is often placed rather higher on the stem, but below the middle.

This plant is distinguished from *P. nemoralis* by its ligule, shorter and lower-placed upper leaf, upper sheath usually covered, and slightly rough stem. It is very similar to *P. cæsia*, but differs in its webbed florets, the lower of which is not longer than the larger glume.—C. C. B.



Ap. 1. 1847

2919.

BARTRAMIDULA Wilsoni.

Wilson's Beardless Bartramia.

CRYPTOGAMIA Musci.

GEN. CHAR. *Capsule* globular, estriate. *Mouth* small, without fringe or annulus. *Calyptra* dimidiate. *Flowers* hermaphrodite.

[Habit and general structure as in *Bartramia*, but much smaller in all the parts; the capsule not furrowed when dry, and without a fringe. It is distinguished from *Glyphocarpa* of Brown and Bridel, and from *Philonotula* of Bruch and Schimper, by the absence of striæ on the capsule; and from the latter also by the hermaphrodite inflorescence.]

SPEC. CHAR. Stems with fasciculate branches. Leaves lanceolate, nerved almost to the apex, serrulate. Capsule roundish pear-shaped, pendulous. Fruit-stalks aggregate.

SYN. Bartramidula Wilsoni. *Bruch and Schimper Bryol. Europ. fasc.* 29.

Glyphocarpa? cernua. *Wilson MS. in Hook. Journ. of Bot. v. 3. p. 383.*

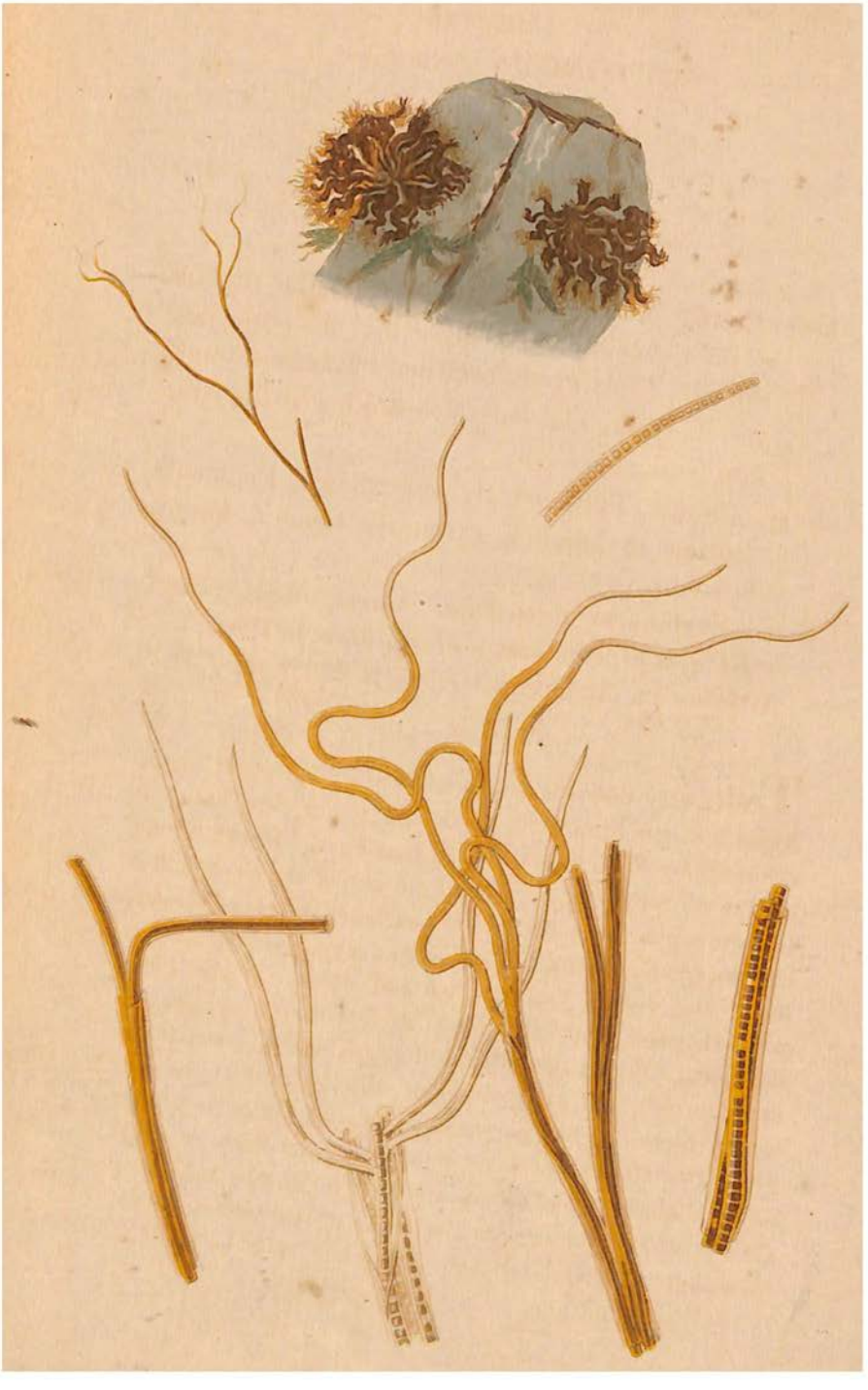
OUR figure and description are made from beautiful and perfect specimens gathered by the Rev. T. Salwey in Cwm Bychan, near Harlech, in North Wales, September 1841, which exactly agree with our own from Conner Hill near Dingle, in the south-west of Ireland, where it was first found, sparingly, in October 1829. Mr. Croall and others have also

gathered it plentifully on a mountain at the head of Glen Dole in the Highlands. These are the only stations at present known; but they suffice to show that it is not, as has been thought, a starved state of *Bartramia fontana*, from which it essentially differs in the inflorescence. It grows in loose peaty soil, in places bare of herbage, and the fruit ripens in September.

Stems tufted, decumbent at the base, ascending, slender, not more than a quarter of an inch long, often less, bearing a few short branches just below the perichætium. Leaves rather crowded, lanceolate, slightly spreading, imbricated and erect when dry, sometimes turned slightly to one side, serrated in the upper half, the cellules rather large and oblong; nerve rather broad, reaching almost or quite to the apex. Perichætial leaves narrower, surrounding the oblong subcylindrical vaginulæ at the base of the slender reddish fruitstalks, which are often two or three together, and sometimes more numerous; they are one-third of an inch long and curved at the top, so that the capsules are usually quite pendulous, though sometimes horizontal, as shown in Bruch and Schimper's figure. Capsule pale red, or while recent flesh-coloured, of delicate reticulated texture, quite smooth while moist, corrugated and somewhat glossy when dry, the small mouth closed by a plano-convex operculum of the same colour as the capsule. Spores rather large, rusty red, granulated. Calyptra almost white, brownish at the top, dimidiate, fugacious.

This cannot easily be confounded with any other British moss; its small size and pendulous pale red capsules distinguish it at first sight from every British species of *Bartramia*. It may be proper to notice here that *Glyphocarpa* and *Philonotula* are no longer considered by Bruch and Schimper to be mere subdivisions of that genus, but as subgenera, equally with *Conostomum*.—W. W.

At fig. 1 the ripe capsules are shown; 2, section of an unripe capsule, showing the sporular sac attached by slender filaments to the walls of the capsule, about thirty times magnified; 3, vaginula with one antheridium and several paraphyses, and perichætial leaves; 4, stem-leaves; 5, upper portion of one more highly magnified.



2920.

SCYTONEMA cirrhosum.

Tufted Scytonema.

CRYPTOGAMIA Algæ.

GEN. CHAR. *Filaments* branched from the rupture of their sheath and the division of the projecting thread. *Endochrome* brown or olivaceous, transversely striated, at length separating at the striæ into lenticular seeds.

SPEC. CHAR. Tufts widely spreading. Filaments floating in bundles, extremely slender, highly flexuous.

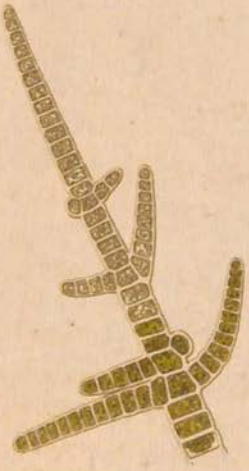
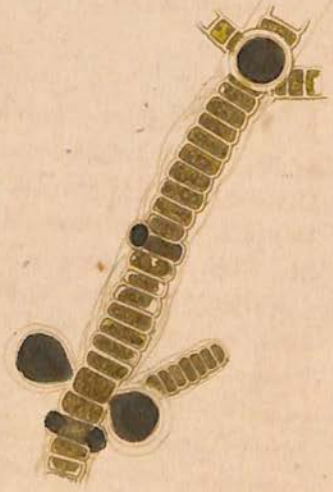
SYN. Scytonema cirrhosum. *Carm. MSS. Eng. Fl. v. 5. pt. 1. p. 366. Harv. Man. p. 155.*
Arthronema cirrhosum. *Hass. p. 238. t. 68. f. 7.*

TWO very different modes of ramification occur in the Algæ hitherto associated under the genus *Scytonema*, as exhibited by *S. ocellatum* and *S. myochrous*. In the former the branch springs immediately from one of the rings, and is at right angles to the thread; in the latter the sheath bursts, and the contained thread issues from the aperture, forming at length two distinct branches, each of which increases independently, and, again giving rise to new branches, increases the plant. Taking the latter as the type of the genus *Scytonema*, though both are referred as varieties to the same species by Agardh, I had purposed to propose for those species which resemble *S. ocellatum* in structure the name of *Hassallia*, but before I had an opportunity of publishing it, Kützing gave to one of the species the name of *Sirosiphon*, which, according to the received botanical canon, must be retained.

The ramification of *Scytonema cirrhosum* appears to differ from that of *S. myochrous*, many threads springing from a single sheath, as in the genus *Microcoleus*; and I am inclined to think that it is essentially the same with that of *Sirosiphon*, the outer tube being so tough that the branchlets do not penetrate it, but creep along between the mother-thread and its tube.

The plant of Mr. Borrer and Mr. Ralfs from the Snowdon lakes appears to be the same as that of Capt. Carmichael. It forms flexuous tufts of brown, very slender threads, proceeding in fascicles from membranous suberect sheaths, and containing a single row of sporangia, scarcely so long as broad. We must refer for the description of Capt. Carmichael's plant to the *English Flora*, where it is given from that gentleman's manuscript, in the possession of Sir W. J. Hooker. The specimens figured were gathered in July 1841. It is possible that Mr. Hassall's genus *Arthronema* may be well-founded, but at present it is too imperfectly characterized to be adopted.—M. J. B.

Fig. 1, magnified termination of one of the simple fasciculate young branches; 2, older portions of the sheath with contained branches; 3, fascicle of older filaments (themselves compound), from a drawing by the Rev. M. J. Berkeley.

2921.

ECTOCARPUS sphærophorus.

Globular-fruited Ectocarpus.

CRYPTOGAMIA Algæ.

GEN. CHAR. *Stem* capillary, generally much-branched, flaccid, jointed, bearing dark *capsules*.

SPEC. CHAR. Filaments slender, short, tufted, much-branched; upper branches patent, opposite or in fours, bearing patent opposite ramuli; capsules globose, sessile, either opposite to each other or to a branchlet.—*Harv.*

SYN. Ectocarpus sphærophorus. *Carm. MSS. Hook. Br. Fl. v. 2. pt. 1. p. 326. Wyatt Alg. Damn. no. 173. Harv. Man. p. 42.*

Ectocarpus brachiatus. *Ag. Syn. p. 67. Syst. p. 162. Sp. Alg. v. 2. p. 42.* (non *Conf. brachiata*, E. B.)

PARASITIC on *Conferva rupestris*, *Ptilota plumosa*, &c. Appin, Capt. Carmichael; Bantry Bay, Miss Hutchins; Devonshire and Cornwall, Mrs. Griffiths and Mr. Ralfs; Welsh coast, Mr. Ralfs. Our specimens were gathered by Mr. Ralfs at Penzance in March.

Varying somewhat in habit, and more in colour, being olive, yellowish, or rusty brown; the fruiting plants are in general short, as represented in our plate, but specimens occur which are three or four inches long and far more diffuse. Threads straight, much-branched; branches binate or quaternate, branchlets mostly opposite; articulations scarcely as long as broad, sometimes much shorter; septa pellucid; endochrome often darker in the centre so as to appear fas-

ciated. Capsules abundant, mostly opposite, globose or broadly obovate, much darker than the threads; when solitary there is generally a short branchlet opposite to them. The outer border of the threads is sometimes thick and irregular.

This species has a different habit from *E. brachiatus*, though the mode of branching is much the same. In that species however the capsules are imbedded in the branchlets. I do not find this species in the collections which have been sent me from the French side of the Channel.—M. J. B.

July 1. 1847.

2922.

LYSIMACHIA ciliata.

Ciliated Loosestrife.

PENTANDRIA Monogynia.

GEN. CHAR. *Calyx* 5-parted. *Corolla* rotate; tube very short or almost wanting; limb 5-parted. *Stamens* inserted at the base of the corolla, with or without 5 alternating barren filaments, free, or more or less connected at the base. *Capsule* 5-valved.

SPEC. CHAR. Stem erect. Peduncles axillary, opposite or whorled, racemose. Leaves opposite or in fours, ovate-lanceolate, subcordate, with ciliated stalks. Petals roundish, crenate, obtuse, pointed. Filaments 10, free, 5 with anthers, 5 barren.

SYN. Lysimachia ciliata. *Linn. Sp. Pl. ed.* 3. *v.* 1. 210. *Mert. und Koch Deutsch. Fl. v.* 2. 133. *Reich. Fl. Germ. Exc.* 410. *Bluff et Fingerh. Comp. Fl. Germ. ed.* 2. *v.* 1. *pt.* 1. 338. *Lej. Fl. Spa. v.* 1. 103. *Lestib. Bot. Belg. v.* 2. 194. *Duby in DeC. Prod. v.* 8. 64. *Koch Syn. Fl. Germ.* (*ed.* 2.) 667. *Bab. Man. Brit. Bot.* (*ed.* 2.) 259.

L. decipiens. "*Bert. in Giorn. Ligust. di Scienze,* 1827. 9." *Reich. Fl. Germ. Exc. add.* 864. *Fl. Germ. Exsic.* 1010 (Specim.).

L. quadrifolia β. ciliata. *Linn. Syst. Veg. ed.* 13. (*Murr.*) 165. *Willd. Sp. Pl. v.* 1. 819.

IT may perhaps be said that our present subject ought not to be included amongst British plants, being usually considered as a native of N. America alone. If not an aboriginal native

however, it has long grown by the road-side between Wigton and Penrith near the village of Sebergham in Cumberland, where it was noticed several years since by the late Mr. W. Backhouse of Darlington. In the continental floras it is recorded as a native of Belgium, and Bertoloni distinguishes it from the American *L. ciliata*, in an Italian journal which we have not seen. According to Reichenbach he states that the leaves are smaller, the fringe on the petioles shorter, and the parts of the flower larger in the European than in the American plant. Our plant agrees with an authentic specimen named *L. decipiens*, Bert., and gathered by Dr. Lejeune between Verviers and Limburg; we have not seen specimens of the American *L. ciliata*. The characters noticed by Reichenbach seem hardly sufficient to separate the plants specifically, and not having seen Bertoloni's observations, we consider it advisable to retain the Linnæan name.

Root creeping. Stem 3-4 feet high, tetragonal, erect. Leaves mostly opposite, or four together in one (rarely two) of the uppermost whorls, ovate-lanceolate with a cordate base, rather glaucous beneath. Petioles rather long, ciliated. Flowers stalked, axillary, opposite or whorled, racemose, nodding. Calyx of five lanceolate sepals connected below. Corolla longer than the calyx, yellow, deeply divided into five nearly round acutely crenate segments, which are very obtuse but cuspidate. The bottom of the corolla and the filaments of the large long anthers covered with minute glands. Stamens 5, not connected below; alternating with them are five more or less prominent triangular-subulate barren filaments. The ten free filaments, of which five are without anthers, distinguish this plant from all our other species.

We are indebted for our specimens to Miss Wright of Keswick, who gathered them, in Mr. Backhouse's station, on the 17th of July, 1844.—C. C. B.

2
July 1. 1847.

2923.

CAREX Grahami.

Graham's Carex.

MONŒCIA Triandria.

GEN. CHAR. *Flowers* in imbricated spikes, each covered by a scale. *Barren flowers* without calyx or corolla. *Fertile flowers* with a single urceolate persistent perigone, enclosing a nut. *Style* 1. *Stigmas* 2 or 3.

SPEC. CHAR. Spikes 4 or 5, cylindrical, ferruginous. Barren spikes 2, rarely 1, slender, acute. Fertile spikes 2 or 3, subserrate, thick, obtuse, the lower ones stalked, evaginate, subnutant. Stig. 2. Perigone oblong-ovate, beaked, bifurcate, inflated, nerved, suberect, ferruginous, pale below, twice as long as the ovate acute scale, which is of a dark brown colour, white at top, with a pale nerve.

Carex Grahami. *Boott Trans. Linn. Soc. v.* 19. *p.* 215. *Bab. Man. Br. Bot. ed.* 2. 363.

C. saxatilis, *Linn.* (C. pullæ, *Good. forma*), (*Bot. Anglicorum.*)

C. vesicaria. *Var.* alpigena. *Fries Nov. Fl. Succ. Mant.* 3. 142. (excl. syn. *Drej.* et *Hook.*)

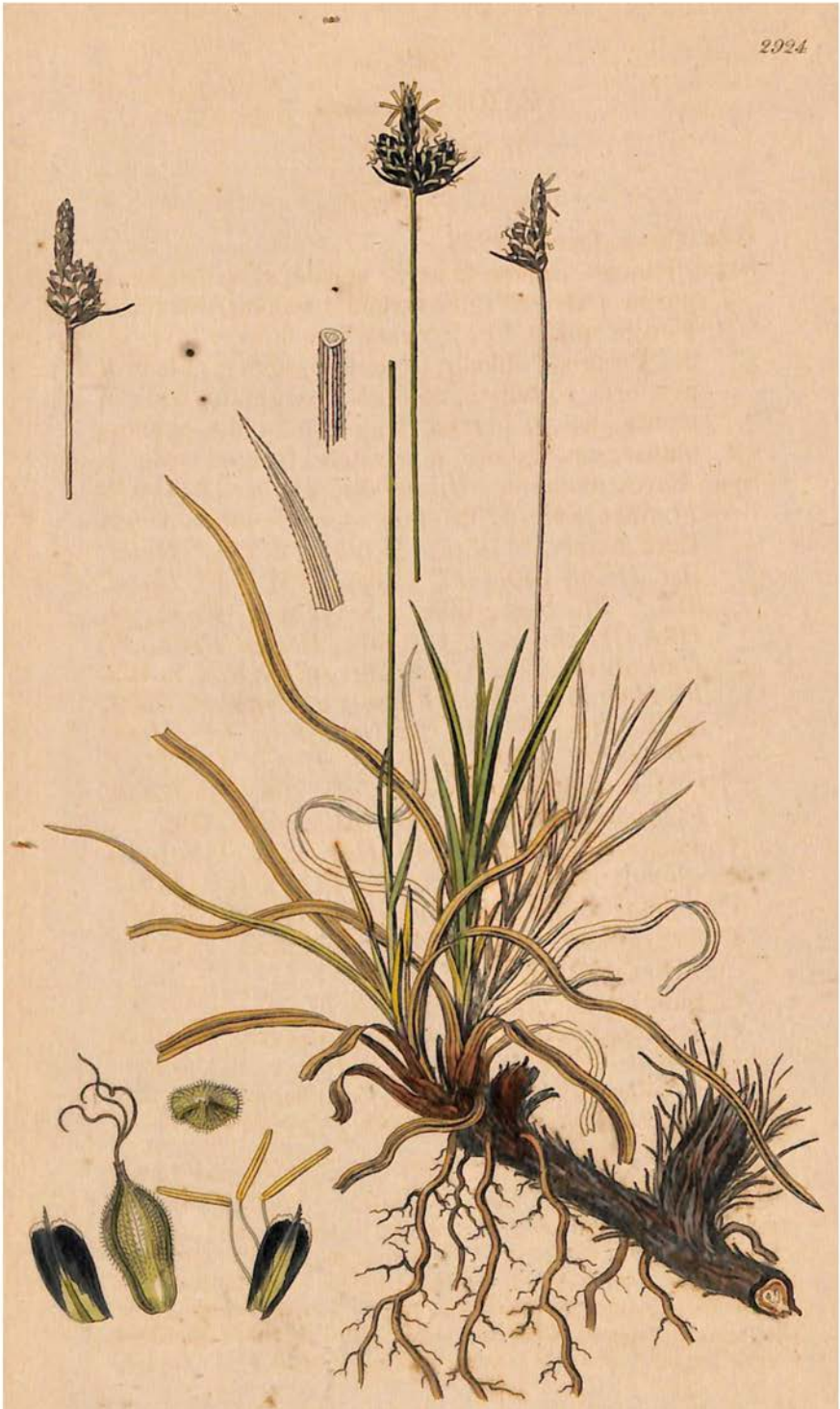
ROOT fibrous, woody, stoloniferous. Culm 2 feet high, acutely triquetrous, striate, rough towards the top, straight, firm, clothed at base with the purplish rudiments of leaves, which are often torn into shreds at the edges, and with sheathing leaves. Leaves 2 lines broad, shorter than the culm, striate, carinate, rough. Bracts leafy, without sheaths, flat, generally exceeding the culm, and furnished with 2 very short, roundish obtuse, ferruginous auricles, which are scarious at the edges. Spikes 4–5, occupying a space from 3 to 4½ inches long at the apex of the culm. Barren spikes 7–9 lines long, 1–1½

line broad, contiguous, acute, the upper one stalked, the lower sessile, separated from the upper fertile one by an interval varying from 2 to 12 lines in length, with closely imbricate scales, which are obtuse, ferruginous, whitish on the edges, and generally becoming paler by age. Fertile spikes 3, rarely 2, obtuse, sometimes short, generally 7–12 lines long, 4–5 lines broad, the upper one sessile, ovate or oblong, rarely barren at top, the others cylindric, peduncled, and furnished with long foliaceous bracts, the lowest more remote, subnutant; the scales ovate, acute, about half the length of the perigone. Perigone $2\frac{1}{2}$ lines long, rather more than a line in breadth, oblong-ovate, beaked, bifurcate, shining, with 3 to 5 nerves, more or less dark ferruginous in colour, pale at base, rarely straw-coloured. Not immature in my specimens.

Discovered by Dr. Wight, July 30, 1832, in a wet spot about half-way up the cliff, on the south side of Glen Phee, Clova, Scotland, and for some years considered a form of *C. saxatilis*, Linn. (*C. pulla*, Good.), until distinguished by Mr. W. Wilson (1843): vid. *Linn. Trans. v.* 19. *p.* 215. I am informed by Mr. Borrer that Prof. Balfour still refers it to *C. saxatilis*. Fries on the contrary considers it an alpine form of *C. vesicaria*, Linn., and unites with it *C. compacta*, Br. (*C. membranacea*, Hook., *C. hymenocarpa*, Drejer).

It differs from *C. saxatilis*, Linn., in its longer culm, proportionately narrower leaves, which are shorter than the culm, its more numerous, cylindric, ferruginous spikes, the lower of which are conspicuously peduncled, the more inflated and elongated, bifurcate, nerved perigone, which is twice the length of the scales. From *C. vesicaria* it is distinguished by its 2 stigmata, &c. *C. compacta*, Br., has a more rigid habit, a stouter culm, leaves sometimes involute, short, strictly erect peduncles, compact approximate spikes, crowded, diverging, stipitate perigones, which are scarcely longer than the scales, short subfoliaceous bracts, and 3, rarely 2, stigmas. It is closely allied to *C. rotundata*, Wahl.—F. B.

Fig. 1, fruit, with its small scale, and male scale, of *C. Grahami*; fig. 2, fruit, large scale, and short spikes, of *C. saxatilis*.



July 1. 1847.

2924.

CAREX montana.

Mountain Carex.

MONŒCIA Triandria.

GEN. CHAR. (see p. 2923.)

SPEC. CHAR. Spikes 2 or 3, sessile, crowded, dark purple. Barren spike terminal, oblong, cylindric. Fertile spikes 1 or 2, ovate, few-flowered. Stig. 3. Perigone oblong, triquetrous above, at length pyriform, rostellate, with an emarginate, fringed mouth, hairy, nerved, longer than the oblong-obtuse, emarginate, mucronate, fringed scale.

SYN. Carex montana. *Linn. Sp. Pl. n.* 15 (1753). *Fl. Suec.* 845 (1755), fide speciminum in Herb. Linn. asserv. *Vill. Fl. Delph. v.* 2. 211. *Wahl. Act. Holm.* 150. *Fl. Carpat.* 301. *Fl. Upsal.* 313. *Fl. Suec.* 605. *Schkuhr t.* F. *n.* 29. *Host Gr. Austr. v.* 1. *t.* 66. *Besser Prim. Fl. Gall. Austr.* 258. *Gaud: Agrost. Helv. v.* 2. 129. *Fl. Helv. v.* 6. 76. *Wimmer et Grab. Fl. Siles. v.* 2. 306. *Reich. Fl. Ger. Exc.* 64. *Icon. Fl. Germ. t.* 261. *f.* 633. *Hoppe Car. Ger. t.* 21. b. *Drejer Fl. Exc. Hafn.* 298. *Koch Syn. Fl. Ger. ed.* 2. 876. *Bab. Man. ed.* 2. 368.

C. conglobata. *Allion. Fl. Ped.* 2314 (1785).

C. globularis. *Willd. Act. Ber.* 45. *t.* 2. *f.* 1. (1794).

C. collina. *Willd. Sp. Pl. v.* 4. 260. *Kunth Cyp.* 437.

C. emarginata. *Willd. Sp. Pl. v.* 4. 262. *Schkuhr t.* Ooo. *n.* 153.

C. pubescens. *Gaudin Etr. de Fl.*

Cyperoides montanum, foliis angustis, &c. *Scheuch. Agrost.* 419. *t.* 10. *f.* 8, 9 (1719).

Cyperoides Alpinum saxatile, capillaceo folio, &c. *Micheli Nov. Gen.* 64. *t.* 32. *f.* 3 (1729).

RHIZOMA thick, branched, creeping, clothed with the pale persistent fibres of the leaves, throwing out tortuous woody roots, "*latum spatium occupans*," as Linnæus observes. Culm 6-12 inches high, slender, triquetrous, rough at top, leafy below, erect, or finally inclined. Leaves about a line in breadth, shorter than the stem, (those of the antecedent year longer,) of a soft texture and a yellowish green colour,

rough towards the top at the margins and under surface. The sheaths of the separate fascicles of leaves red, by which character, Gaudin remarks, it is distinguishable from its (*European*) allies. Barren spike about 6 lines in length and a line in breadth, acute at base and apex, sessile or on a short peduncle. Fertile spikes 1 or 2, sessile, contiguous, 3 to 4 lines long and 2 lines broad. All the scales are finely ciliate, mucronate, of a dark purple or ferruginous hue, paler at the margins; those of the barren spike closely imbricate, either emarginate or acuminate; those of the fertile spike obtuse and emarginate, striate at base, the nerves sometimes white. Bracts in the form of scales, with a setaceous point, the lower one generally shorter than its spike, rarely leafy and elongated. Perigone $1\frac{7}{9}$ lin. long, $\frac{7}{9}$ lin. broad, oblong, white, shining, smooth, turgid, and spongy below: above triquetrous, more or less tinged with purple, hairy, nerved, with a very short beak and an emarginate ciliate orifice; in drying becoming pear-shaped, retaining its triquetrous form; finally deciduous. Nut $1\frac{6}{9}$ lin. long and $\frac{6}{9}$ lin. broad, triquetrous, ferruginous, punctulate, pointed at top, stipitate.

Differs from *C. præcox*, Jacq., in its crowded, shorter, evaginate fertile spikes, and from *C. pilulifera*, Linn., in its emarginate scales and having only one or two fertile spikes.

Discovered by Mr. W. Mitten in 1842 in heathy ground near Tunbridge Wells, and referred by him to the *C. montana*, Linn. Flowers in April and May. Mr. Borrer tells me that it flowers about the same time as *C. præcox*, but matures its fruit sooner, and that *C. pilulifera* is a much later plant. The strong, woody, shaggy, and creeping rhizoma, is enough to distinguish it from them, independent of other characters. The specimens of this plant in the *Linnæan Herbarium* marked "*montana*, 15." by Linnæus were thought by Sir J. E. Smith (*Linn. Trans.* v. 2. p. 191, and *Eng. Flora*, v. 4. p. 103) to be the same as *C. pilulifera*, and in his own Herbarium he has placed Bohemian ones from Sieber in the same sheet with specimens of *C. pilulifera*, while he has others from Switzerland which he has marked in pencil "*collina*," a name which Willdenow, misled by Smith, gave to it.

Of *C. emarginata*, Willd., Kunth says, "*nescio quo charactere à* C. collina *distinguenda.*" The specimen in *Herb. Willd.*, he says, is young and like Schkuhr's fig., in which the form of the fertile spikes is more oblong than in our English plant. Gaudin speaks of a variety "*spicis femineis subconfluentibus*," to which he refers *C. conglobata*, All., and his own *C. pubescens*. I have never seen more than two fertile spikes, and all crowded; but Gaudin alludes to three, the lower one sometimes distant. I am indebted to Mr. Borrer for several of the synonyms, and to him and Mr. Forster for my specimens.—F. B.

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2925.

GYMNOMITRIUM adustum.

Brown Gymnomitrium.

CRYPTOGAMIA Hepaticæ.

GEN. CHAR. *Fruit* terminal. *Perianth* none except the convolute involucral leaves. *Calyptra* immersed in the involucre.

SPEC. CHAR. Stipules none. Stems very short, creeping at the base; branches ascending, subclavate, terete, straight. Leaves ovate, closely imbricate, edges not scarious, apex bifid.

SYN. Gymnomitrium adustum. *Nees ab Esenb.* "*Europ. Leberm.*" *Synops. Hepat.* 3.
"Acolea brevissima. *Dumort. Syll.* 76. *n.* 109."
"Jungermannia concinnata β. minor. *Schleich. Cat. Exsicc. a.* 1821."

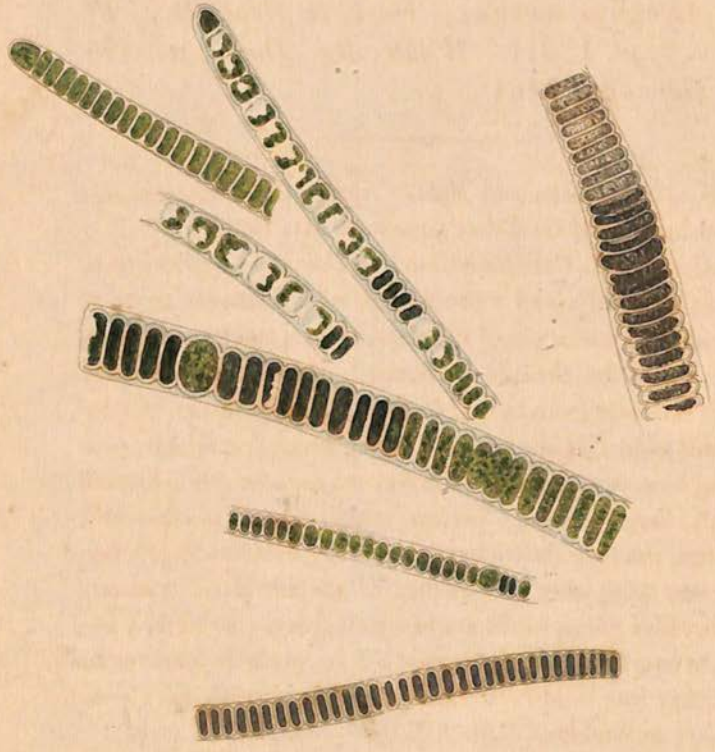
GATHERED in March 1847, from sandstones in a ravine in Blackdown, Sussex, above the Rundhurst farm-house. It was discovered there, as long ago as 1839, by Mr. E. Jenner, who at the time referred it very doubtfully to *Gymnomitrium concinnatum* (the *Jungermannia concinnata* of authors, *Engl. Bot.* 2229), and was afterwards led to regard it as a small variety of *Sarcoscyphus Ehrharti* (*Jungermannia emarginata*, *Engl. Bot.* 1022), but it is doubtless distinct, and the species named by Nees as above.

The stems of this minute species are closely crowded into small even patches of a dark brown colour. The leaves are bifarious, ovate, concave, and closely imbricate; the apex bifid, the segments in the lower ones being acute, gradually becoming more obtuse as they approach the involucre, which is

composed of the two uppermost leaves more or less adhering together by their lower edges. Pedicel short and rather stout. Capsule deep brown; seeds brown; spiral filaments in a double helix. Anthers single or in pairs in the axils of the upper leaves.

Gymnomitrium adustum is distinguished from our mountain species G. *concinnatum*, as well as from G. *coralloides*, which Dr. Taylor has found in Ireland, by the absence of a scarious margin to the leaves, and from *Sarcoscyphus Ehrharti* and *S. Funkii*, which last it most nearly resembles in general appearance, by its smaller size and more imbricated leaves, and essentially by the different structure of the perianth.—W. Mitten.

Fig. 1, lower leaves; 2, upper leaf with a pair of antheridia; 3, involucrum; 4, young fruit with pistilla (from Mr. Mitten's drawings).



2926.

LYNGBYA speciosa.

Beautiful Lyngbya.

CRYPTOGAMIA Algæ.

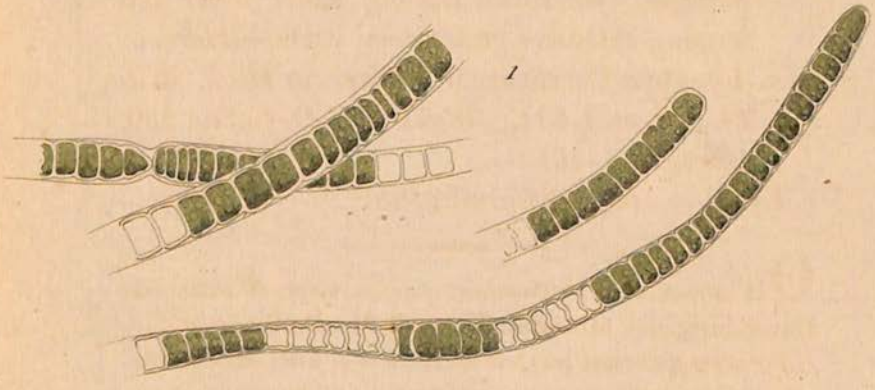
GEN. CHAR. *Filaments* destitute of a mucous matrix, flexible, elongated, continuous, decumbent, not oscillating. *Endochrome* finally separating into lenticular spores.

SPEC. CHAR. Filaments long, thick, flaccid, straight, at length curled, the margin crenate, freely floating in the water and forming extensive bright green strata, glossy when dry.—*Harv.*

SYN. Lyngbya speciosa. *Harv. in Hook. Brit. Fl. v. 2. pt. 1. 371. Wyatt Alg. Damn. no. 196. Harv. Man. 161.*

ON marine rocks and Fuci. Appin, Capt. Carmichael; Devonshire, Mrs. Griffiths; Cornwall, Mr. Ralfs.

Resembling *L. Carmichaelii* in habit, but of a brighter green, shining when dry, and more curled, with filaments twice as thick and the interstices of the endochromes much constricted, so as to give the threads a crenated appearance: the outer tube is however straight and in general not so thick. Endochromes as in *L. Carmichaelii* varying according to age; presenting however considerable difference as to length in mature threads; very dark when perfect, so that when a portion only is mature the threads are curiously variegated; at length free and often lying over one another in an imbricated manner. The broader joints, which are of a pale green, give birth, I believe, to two fertile endochromes. I am not able however to assert that this is always the case. The threads vary considerably in thickness.—M. J. B.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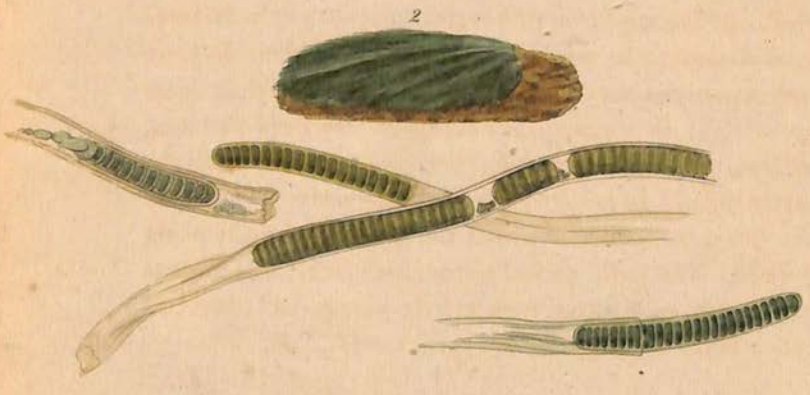
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2927. *f.* 1.

LYNGBYA Carmichaelii.

Captain Carmichael's Lyngbya.

GEN. CHAR. *Filaments* destitute of a mucous matrix, flexible, elongated, continuous, decumbent, not oscillating. *Endochrome* finally separating into lenticular spores.

SPEC. CHAR. Filaments very long, thickish, curled and tortuous, cylindrical, floating under water and forming extensive grass-green strata.—*Harv.*

SYN. Lyngbya Carmichaelii. *Harv. in Hook. Brit. Fl. v. 2. pt. 1. 371. Wyatt Alg. Damn. no. 230. Harv. Man.* 161.

Lyngbya crispa. *Carm. MSS.*

ON rocks and sea-weeds. Appin, Capt. Carmichael; Devonshire, Mrs. Griffiths; Cornwall, Mr. Ralfs.

Forming extensive patches on rocks and Fuci, attached behind, but with the upper extremities free. Threads of a vegetable green without any verdigris tint, and resembling much those of *Conferva rivularis*, especially when dry, but more curled. Articulations varying in their proportions in the same thread according to age, but always shorter than they are broad, sometimes very narrow; endochromes with their outer edge straight or swollen, sometimes transversely flexuous, disciform, at length becoming free and escaping from the common tube. In certain lights they appear as if they were really rings, but this arises from the centre of the disc being depressed. The fertile endochromes are darker. The threads of the specimen figured were mostly young, and therefore very few of the endochromes are perfect.—M. J. B.

2927. *f.* 2.

LYNGBYA ferruginea.

Rusty Lyngbya.

Gen. Char. *Fruit* terminal. *Perianth* none except the convolute involucral leaves. *Calyptra* immersed in the involucre.

Spec. Char. Filaments slender, flaccid, forming a lax stratum of a verdigris-green colour, which gradually changes to a pale chestnut.

Syn. Lyngbya ferruginea. *Agardh Syst. Alg.* 73. *Harv. in Hook. Eng. Fl. v.* 5. *pt.* 1. 370. *Harv. Man.* 160.

Lyngbya subsalsa. *Carm. MSS.*

On mud occasionally covered by the tide. Appin, Capt. Carmichael; Sussex coast, W. Borrer, Esq.; Holyhead and coast near Dolgelley, J. Ralfs, Esq., to whom we are indebted for our specimens of this and the two preceding species.

Forming a loose thin stratum on mud. Threads an inch or more long, flexuous, but not twisted, of a pale verdigris-green which changes in the older portions to yellow-brown. Rings apparently distant or approximate according to their degree of development, at length bursting in masses from the tubes which are left more or less empty.

Specimens received from M. Lenormand gathered at Caen have far more slender threads than those of Mr. Ralfs, and belong to a distinct species.—M. J. B.

2928.

ARMERIA plantaginea.

Plantain-leaved Thrift.

PENTANDRIA Pentagynia.

GEN. CHAR. *Calyx* 5-cleft, persistent, inferior, funnel-shaped, plaited, scarious above. *Corolla* 5-parted. *Capsule* not bursting. *Flowers* in a head with an inverted cylindrical sheath.

SPEC. CHAR. Leaves broadly linear or linear-lanceolate, 3–5-nerved, narrowed below. Scape glabrous. Outer involucral bracts cuspidate; intermediate obtuse, mucronate; inner broadly obtuse. Pedicels not half as long as the villoso-striate tube of the calyx.

SYN. Armeria plantaginea. *Willd. Hort. Berol.* 334. *Reich. Fl. Germ. Excs.* 190. *Bab. Prim. Fl. Sarn.* 77. *Man. Brit. Bot.* 245. *Coss. et Germ. Fl. Paris.* 244.

A. scorzonerifolia. *Willd. Hort. Berol.* 334.

A. alliacea. *Reich. Iconog. Bot. t.* 966.

Statice plantaginea. *All. Fl. Pedem. v.* 2. 90.? *Duby Bot. Gall. v.* 1. 389. *Hook. Brit. Fl. ed.* 5. 270. *Koch Syn. ed.* 2. 682.

THE plant before us is an abundant native of a sandy and rather hilly district in the eastern part of the island of Jersey, but has not been found in England or Ireland. Very great difficulty attends the determination of the synonymy of this and some allied plants, we have therefore omitted several probable synonyms from our list.

Root cæspitose. Leaves all radical, broadly linear, or

narrowly linear-lanceolate, with 3 or 5 nerves, acutish, narrowed below, coriaceous, glabrous. Scapes round, with irregular elevated lines, minutely tuberculated or with rather prominent tubercles. Heads roundish. Involucre with a cylindrical inverted brown sheath at its base; outer bracts ovate and strongly cuspidate, sometimes lanceolate-cuspidate from an oval base; intermediate bracts obtuse but mucronate; inner ones very obtuse and broadly membranous. Tube of the calyx with elevated hairy ridges and glabrous interstices; limb membranous, transparent, glabrous, with 5 setaceous roughish points. Petals 5, almost distinct, obovate-lanceolate, rounded or truncate at the end, pale purple. Filaments attached to the petals nearly throughout. Styles hairy below.

Pedicel scarcely half as long as the tube of the calyx. Koch says "pedicellis longitudine tubi calycis," and of *A. scorzonerifolia* he says "tubo dimidio brevioribus." It seems probable that he has transposed the characters of the plants, if indeed either of them ever has its pedicel as long as the tube. In a specimen from one of the stations mentioned by Koch (Mainz u. Nieder-Ingelheim), the pedicels are as short as in our plant if those of expanded flowers are examined.

We have much satisfaction in publishing a figure of the Jersey plant, as we trust that it will tend to the more certain determination of its identity with, or difference from, the species of the continental botanists. Good figures derived from recent specimens are much wanted in this genus. The specimens from which the figure was taken were kindly sent from Jersey by Dr. Joseph Dickson of St. Heliers.—C. C. B.

October 1st 1847.

2929.

CREPIS taraxacifolia.

Smaller Rough Hawk's-beard.

SYNGENESIA Æqualis.

GEN. CHAR. *Involucre* double; inner of one row; outer of short lax scales; rarely imbricate. *Receptacle* naked or fimbriated. *Florets* all ligulate and perfect. *Fruit* terete, narrowed upwards or beaked. *Pappus* in several rows, hair-like, deciduous, white.

SPEC. CHAR. Leaves rough, runcinate-pinnatifid. Heads erect. Involucre bristly and downy, covering half the pappus of the fruit; outer scales ovate-lanceolate with a membranous margin. Bracts herbaceous, linear. Fruits all equally contracted into a long beak.

SYN. Crepis taraxacifolia. *Thuil. Fl. Par. ed.* 1. *v.* 1. 409. *Koch Syn. Fl. Germ. ed.* 2. 501. *Bab. Man. ed.* 2. 191.

Barkhausia taraxacifolia. *DeCand. Fl. Franc. ed.* 3. *n.* 2949. *Prod. v.* 7. 154. *Reich. Fl. Germ. Excs.* 256. *Koch Syn. Fl. Germ. ed.* 1. 436. *Bab. Man. Brit. Bot. ed.* 1. 179. *Coss. et Germ. Fl. Paris.* 438. *Godron Fl. Lorr. v.* 2. 84.

NO modern representation of this plant exists, and it is remarkable that, with the exception of our *t.* 194, no plate of *Crepis biennis* is noticed by authors. Unfortunately that figure (*t.* 194) is much less perfect than we could wish; indeed the ripe fruit there figured seems to belong to our present subject,

which was confounded with *C. biennis* by Smith. We now give figures (*b*) of the unripe and ripe fruit of *C. biennis* to contrast with that of *C. taraxacifolia*.

Root fusiform, biennial. Stem 1–2 feet high, erect, generally simple below, usually coloured reddish purple, especially at the base, hispid, branched above. Leaves clothed with rigid hairs, mostly radical, stalked, lyrate-runcinate or pinnatifid with the terminal lobe very large; lower stem leaves runcinate-pinnatifid, sessile, with numerous closely-placed narrow lobes at the base; upper leaves linear-lanceolate with linear lobes below. Heads in an irregular corymb, erect. Involucre of two rows of bracts; inner row bristly and downy, longer than the ripe fruit and covering the lower half of its pappus, silky on the inner side; the outer row much shorter than the inner, lax, pale brown, nearly glabrous, broadly scarious at the edges. Florets yellow, tinged with red externally. Fruits all narrowing very gradually into slender beaks of about their own length, the ribs rough. Pappus white and soft, about as long as the fruit.

Crepis taraxacifolia is probably a more common plant in England than *C. biennis*; it inhabits limestone districts and is more especially abundant in Kent. The specimen figured was gathered at Hythe on the 23rd of July 1845, by Messrs. Forster and Borrer. In many collections this plant will be found preserved under the name of *C. biennis*, with which it was confounded by British botanists until the difference between them was pointed out by Mr. Joseph Woods.—C. C. B.

Oct.r 1.st 1847.

2930.

RANUNCULUS Lenormandi.

Lenormand's Crowfoot.

POLYANDRIA Polygynia.

GEN. CHAR. *Calyx* of 5, rarely 3 leaves. *Petals* 5 or more, with a nectariferous pore at the base. Pericarps without awns.

SPEC. CHAR. Stem floating or creeping. Leaves all cordate subrotund, subpeltate, 3–5-lobed; each lobe with 2 or 3 notches. Carpels transversely rugose, semi-obovate, with a terminal acute point tipped with the style. Receptacles not setose.

SYN. Ranunculus Lenormandi. *F. W. Schultz in Flora, v.* 20. 726. "*Godr. in Mem. Soc. Nancy* 1839, 8." *Fl. Lorr. v.* 24. 171. *Walp. Repert. v.* 1. 34. *Coss. et Germ. Fl. de Par.* 9. *et Atlas, t.* 1. *f.* 3, 4. *Lloyd Fl. de la Loire Inf.* 3. *Bab. in Ann. Nat. Hist. v.* 16. 141. *Man. Br. Bot. ed.* 2. 6. *Wats. Cyb. Brit. v.* 1. 180.

R. hederaceus β. grandiflorus. *Bab. Man. Br. Bot. ed.* 1. 5.

R. hederaceus b. partitus. *Wats. in Lond. Cat. Br. Pl.* 1.

IT is almost thirty years since this plant was sent to the late Mr. Jas. Sowerby by Mr. John Hopkirk, jun. as a new and undescribed species, but, owing probably to its resemblance to *R. hederaceus*, it was laid aside and thus escaped notice. To Mr. F. W. Schultz belongs the credit of having first pointed out its claims to specific distinction, and he is followed in that opinion by all those botanical authors whose attention has been drawn to it.

The plant is so like *R. hederaceus* in general appearance, that a reference to the plate, accompanied by a short notice of its differences from that species, will be of more use than a laboured description. Its stem floats upon water or creeps on wet mud, rooting at every joint as in that plant. Its leaves are rounder and more peltate, and have more deeply divided lobes,

which are slightly notched. Stipules less adnate to the petioles, the connection usually extending through about one-third of the length of the former; broad in proportion to their length: in *R. hederaceus* they are more than half adnate and relatively much narrower. Petals white or slightly tinged with pink, their base yellowish, longer than the calyx and usually broader than those of its ally, which are narrow and often scarcely longer than the calyx; but this is not a constant character, as occasionally they may be found almost as large and long as those of *R. Lenormandi*; still always, we think, relatively narrower. The ripe carpels are half-obovate with a terminal, but not central, acute point; in *R. hederaceus* they are half-oval and very blunt at the end, the point bearing the style being lateral and considerably below their rounded extremity. It is remarked in the *Flore de Paris* that the ripe carpels of this plant are usually greenish, whilst those of *R. hederaceus* are rather white.

The want of submersed divided leaves, and more especially the absence of setæ from the receptacle, distinguish this plant from *R. aquatilis* and its allies, to some of which it bears a close external resemblance, particularly to the *R. Petiveri* of Koch (*R. ololeucos*, Lloyd; *R. tripartitus β. obtusiflorus*, DeC.), which has been recently found in Surrey by Mr. Watson, and near Bristol by Mr. Borrer.

This Crowfoot has been observed near the head of Coniston Water in Lancashire by Mr. Jas. Backhouse, jun.; in Cumberland and near Esher and Claygate, Surrey, by Mr. H. C. Watson; near Plymouth by Mr. J. W. N. Keys; in various parts of Surrey, Sussex, North and South Wales, and the West of England, by Mr. Borrer; in Needwood Forest, Staffordshire, and Charnwood Forest, Leicestershire, by the writer; and in some other places to which we have no reference. It is probably generally distributed throughout England, and may be expected to be equally common in Ireland, although not as yet observed, we believe, in that country.

On the continent of Europe it is at present known to inhabit the Asturias and western parts of France. We are indebted to Mr. R. Lenormand of Vire for beautiful specimens of this plant (which is named in his honour), gathered from its original station near to that town.

The flowers are continuously produced during the spring and summer months.

A head of fruit and one carpel of *R. hederaceus* are added to the plate (marked *b*) to show their difference.—C. C. B.

Oct.r 1st 1847.

ZOSTERA nana.

Dwarf Grass-wrack.

MONŒCIA Monandria?

GEN. CHAR. *Spath* linear, terminating in a leafy point. *Spadix* flat, bearing the flowers in two rows in front. *Cal.* none. *Cor.* none. *Ovary* affixed towards the tapering apex. *Stigm.* 2, long and pointed.

SPEC. CHAR. Leaves one-nerved. Stipular sheath truncate. Peduncle of the spath as long as the spadix, not thickened upwards. Spadix short, few-flowered, with intramarginal appendages.

SYN. Zostera nana. *Roth Enum. Pl. Germ. pt.* 1. 8. *Man.* 8. *Reich. Icon. Fl. Germ. v.* 7. *t.* 2. *Koch Syn. ed.* 2. 783. *Fries Nov. Suec. Mant.* 3. 133. *Bab. Man. Brit. Bot. ed.* 2. 346.

Z. uninervis. *"Vahl." Reich. Fl. Excurs.* 137.

Z. Noltei. *Horn. Fl. Dan. v.* 12. 3. *t.* 2041.

Potamogeiton marinum in utriculis ephiphyllospermon minus. *Raii Syn. ed.* 3. 53?

FROM Poole Harbour, Dorsetshire, in August 1847. It covers the mud to a great extent, mixed in some places with *Ruppia rostellata*. It is satisfactory to be able to assign a "local habitation" to a plant hitherto regarded as British only on the authority, it is understood, of fragments found by Mr. Sonder of Hamburgh among seaweeds sent to him from the Dover beach. The doubtful plant of Ray was from Portsea Island.

Plant apparently perennial. Stem slender, creeping, somewhat compressed, slightly incrassated at the joints, from each of which issue a few fibrous roots, and a simple erect branch producing 2–5 alternate leaves closely invested at the base with a pale, truncate, membranous sheath. Leaves grass-green, thin and pellucid, flat, linear, about one-tenth of an inch in width, with one central nerve, and parallel striæ crossed at short intervals by alternate transverse veins which connect the nerve with the incrassated nerve-like margins; apex rounded and entire at first, soon becoming emarginate; barren leaves from a sheathing base, 3, 4 inches, or more in length; fertile ones on separate branches and not more than

half the length, on compressed stalks of equal thickness throughout, half an inch or more long when full-grown. Base of the leaf a little widened, bearing the fructification on its anterior surface within two filmy longitudinal spathaceous valves about as long as the peduncle, between which the stigmas protrude when in flower, and the anthers also are partially uncovered. Spadix sessile within the spatha, the cavity of which it almost fills, linear-oblong, rather concave, with narrow inflexed edges, bearing alternately on its midrib in front, in two close-set rows, about four pistils and as many pairs of anthers, the lower pistil being sometimes suppressed or imperfect. Anthers sessile or on the shortest possible footstalks, pale yellow, sulcate on the upper surface, oval-oblong, narrowed and somewhat curved at the upper end, towards which is the point of attachment. Germen pale, smooth and even, smaller than the anthers, which it resembles in shape and in mode of attachment, tapering gradually to a curved neck terminated by two long, slender, acute, spreading stigmas. The perfect fruit we have not examined: it is described as even, but Fries remarks that it appears slightly striated under a glass. Within the incurved margins of the spadix grow a few alternate, small, flat, green appendages, strap-shaped, rounded at the apex, stretching inwards to about the middle of the spadix, and, after the fall of the anthers, clasping the necks of the enlarged ovaries, which however they do not always equal in number.

It is a question whether the flowers of this genus are hermaphrodite or not. The anthers in some instances equal the pistils in number, and in others are twice as many. For a beautiful analysis of the fructification, see *Z. marina* in *Fl. Lond., new series, t.* 35.

Doubts have arisen as to the identity of Roth's species from his having quoted *Z. marina* β. *angustifolia*, *Fl. Dan. t.* 1501, as a synonym, and preserved, it is said, that plant in his herbarium as *Z. nana* (Fries, *l. c.*). Yet, as his description agrees best with our plant, and as Koch has seen specimens of it from Mertens, the discoverer, gathered in the Isle of Nordeney, Roth's station, we do not scruple to retain for it this very appropriate name. Reichenbach adopts Nolte's name, *Z. minor*, in his text, but prefers Roth's on his plate. Forskael's Red Sea plant, *Z. uninervis* (*Fl. Ægypt.-Arab. p.* 157, *Vahl Enum. v.* 1. *p.* 14), may or may not be the same: the description does not enable us to decide: but Koch's objection is not valid, the barren leaves of ours assuredly attaining the length of "a span or more." Few of those who have written on our plant appear to have seen it alive. Fries says that it is not unfrequent in Denmark.

In the highly magnified portion on the plate one margin of the spadix is laid open, and the stamens and pistils are pushed aside, to show the insertion of these and of the clasping appendages, one of which also is turned back.—W. B.

2932.

PHASCUM crassinervium.

Thick-nerved Phascum.

CRYPTOGAMIA Musci.

GEN. CHAR. *Fruitstalk* terminal. *Capsule* closed (lid persistent). *Peristome* none. *Calyptra* dimidiate, sometimes campanulate.

SPEC. CHAR. Stemless. Leaves linear, suberect and recurved, toothed at the apex, nerve thick and excurrent. Capsule ovate, pointed, almost sessile, immersed in the leaves. Calyptra dimidiate.

SYN. Phascum crassinervium. *Schwaegr. Suppl. v. 1. pt. 1. p. 4. t. 2? Nees and Hornsch. Bryol. Germ. v. 1. p. 40. t. 4. f. 3? Greville Scot. Crypt. Fl. t. 353!*

P. pachycarpon. *Bruch and Schimper Bryol. Eur. Fasc. 1. p. 8. t. 2* (excluding all the synonyms there cited).

P. recurvifolium. *Mougeot and Nestler Stirp. Crypt. Voges. no. 902.*

IT is with much reluctance that we dissent from the views of Bruch and Schimper concerning this moss, which we assume to be identical with their *Phascum pachycarpon*, while it exactly corresponds with original specimens of Dr. Greville's *P. crassinervium*, and with his admirable figure and description, which the authors of the *Bryologia Europæa* appear not to have seen. With Dr. Greville's concurrence, we retain the name given by him for the following reasons:—*Phascum recurvifolium*, Nees and Hornsch. *Bryol. Germ.* 1. 42. *t.* 5. *f.* 4, and *P. pachycarpon*, Schwaegr. *Suppl.* I. 1. *p.* 6. *t.* 2, (which are both cited by Bruch and Schimper without any remark under their *P. pachycarpon*,) represent the leaf, as in *P. patens*, Hedw., with a thin narrow nerve, ceasing below the apex. Nees and Hornschuch even cite *P. recurvifolium*, Dickson, *Crypt.* fasc. 4. *p.* 1. *t.* 10. *f.* 2, as a synonym, or rather as the type of their "*P. recurvifolium*, Dickson." Bridel (in *Bryol. Univ. v.* 1. *t.* 31) has the following remark: "*P. recurvifolium*, Dicks. huc non pertinet estque mera *P. patentis* varietas, aliter tamen sentiente Clar. Nees von Esenb.," while he makes no mention of any remarkable thickness of the nerve in his own *P. recurvifolium*, which he thus describes: "folii nervo manifesto

subexcurrente instructa." Again, Schwaegrichen describes his *P. crassinervium*, "folia crassa, rigida, *nervo crasso, latissimo*, ad apicem pertingente;" whereas Bruch and Schimper, in describing their "*P. crassinervium*, Schwaegr.," merely say, "folia costa basi pallida evanescente superne validiore, foliique limbum superante:" hence it is doubtful whether they describe the same moss. In the absence of conclusive evidence to the contrary, we think it safer to refer the name *crassinervium* to the only species of the two possessing a character in strict accordance with the meaning of the word. It is to be regretted that the authors of the *Bryologia Europæa* have not attempted to justify a contrary proceeding in citing the figures of Schwaegrichen and of Nees and Hornschuch, so very different from their own, and so unlike the moss now under consideration.

The Rev. M. J. Berkeley first detected this moss near Wansford, in Northamptonshire, in Dec. 1827. Mr. Mitten has recently observed it at Hurst Pier-point and other places in Sussex. Our specimens were gathered by John Thornhill, Esq., in fields on the coast of Durham, about halfway between Sunderland and South Shields, in October and December 1840, forming olive-green patches from 1 to 4 inches in diameter. When in a young state it is accompanied by confervoid shoots, which disappear as the plant advances to maturity; hence they have been overlooked in some former descriptions. Such shoots indeed are common to all mosses in an early stage of growth, but are more conspicuous in the *Phasca*; and some writers (*v.* Bridel, *Br. Un.* 1. 29) have strangely fancied them to be a distinct vegetable, specially designed to fulfil the office of nurse towards the infant *Phascum*.

The leaves of our moss are remarkable for their linear shape and for the thick and well-defined nerve, projecting beyond the pagina, which often terminates more suddenly on one side than on the other, giving an irregular figure to the apex of the leaf. This character is often more conspicuous than is represented in our magnified figure. The reticulation of the leaf consists of roundish areolæ, smaller than those of *P. serratum*. Usually the leaves are coarsely toothed near the apex, and sometimes from the middle upwards. Capsule broadly elliptical or roundish, with an oblique point nearly half its own length, almost sessile on the vaginule, which is longer and narrower than in *P. stenophyllum*, *t.* 2829, which the moss very nearly resembles in size. Seeds rather large, pale and pellucid, about 100 in each capsule. Calyptra dimidiate.

This moss differs from *P. stenophyllum*, its nearest British ally, in its broader, linear, not tapering leaves, the strong and distinctly projecting nerve, and truly dimidiate calyptra. The capsule also is larger and more pointed. It is closely allied to *P. cohærens*, Hedw.; but that species has the leaves considerably broader and more lanceolate.—W. W.

M.J.B. del.

Oct.r 1st 1847.

2933.

SCENEDESMUS obliquus.

Oblique Scenedesmus.

CRYPTOGAMIA Algæ.

GEN. CHAR. Green, fusiform, elliptic or globose, often acuminate bodies, joined laterally and forming a short plane tæniæform *thread.*

SPEC. CHAR. Corpuscles 8, oblong-elliptic, acuminate, forming a double, often oblique row, the one seated about the other.

SYN. Scenedesmus obliquus. *Kütz. in Linn. v.* 8. *p.* 609.

Scenedesmus triseriatus. *Meneg. Linn.* 1840. *p.* 208. *Ralfs in Ann. of Nat. Hist. v.* 15. *p.* 403. *t.* 12. *f.* 7. *Hass. t.* 92. *f.* 15, copied from *Ralfs*, wrongly referred in text to *S. obtusus.*

Achnanthes obliqua. *Turp. Mém. du Mus. v.* 16. *t.* 13. *f.* 9.

Arthrodesmus acutus. *Ehrb. Inf. t.* 10. *f.* 19. *b.*

FORMING a thin green stratum. Threads composed of eight corpuscles, apparently arranged in two rows, but when accurately examined evidently arranged, more or less distinctly, in three, of which the two outer corpuscles form one intermediate between the other two, each of which consists of three often obliquely placed corpuscles, alternating with those of the other row. The two outer corpuscles are oblong-elliptic, with the outer side less curved, and furnished at either end with a more or less elongated process. The other six corpuscles vary very much in form according to the degree in which they are pressed together at the point of junction, and

are either quite obtuse at the free apex or strongly acuminated. They appear to be bound together by a very pellucid jelly, which is sometimes very visible, especially at the junction of the alternate cells. The corpuscles have a pellucid border, and a few globose bodies, by no means constantly three, immersed in a green grumous mass. This at length entirely vanishes, and the cells are left empty and colourless.

A portion of the terrestrial form of *Vaucheria cæspitosa* having been placed in a vessel of water and exposed to the rays of the sun, in a few days the sides of the vessel were covered with a green stratum, which is the subject of the present illustration. The genus *Scenedesmus* belongs to a highly curious group of Algæ, the free *Desmidiaceæ* of Kützing, whose nature and limits are at present but little known. It is probable that many of the species figured by Kützing, Meyen and Turpin will hereafter be united. Amongst the true *S. obliquus* many individuals occurred which might be referred to described species, but I could not but consider them as different stages of one species. Some of these are represented.

a, portion of plant, natural size; *b*, *c*, *d*, plant variously magnified; *e*, corpuscles highly magnified; *f*, forms resembling *S. minor*, *acutus*, *quadrialternus*, &c.—M. J. B.

Jan.y 1.st 1848.

ALLIUM sibiricum.

Cornish Chives.

HEXANDRIA Monogynia.

GEN. CHAR. *Perianth* single, of 6 petaloid leaves. *Stamens* inserted at the base of the perianth. *Anthers* incumbent. *Germ.* superior, of three lobes inclosing the base of the style. *Stigma* simple, or slightly incrassated.

SPEC. CHAR. Umbel hemispherical, crowded, without bulbs. Leaves fistulose, striated, roughish, spreading, curved. Scape cylindrical, roughish. Spatha of 2 short rounded valves. Perianth campanulate; its leaves bluntish elliptical, somewhat imbricate. Filaments all *simple, shorter* than the perianth.

SYN. Allium sibiricum. *Linn. Mant.* 562. *Willd. Sp. Pl. v.* 2. 82. *G. Don in Mem. Wern. Soc. v.* 6. 29.

Cepa scapis foliisque teretibus, capitulis pyramidatis. *Gmel. Fl. Sibir. v.* 1. 59. (excl. vars. 1, 2?) *t.* 15. 1.

C. palustris altissima. *Buxb. Pl. Min. Cogn. cent.* 4. 27. *t.* 45.

ON rocks on the coast of Cornwall. In great plenty between Kynance Cove and Mullion, as also at Tintagel, where it was discovered in 1838 by the late Rev. R. F. Bree, and where our specimens were gathered in July 1839. Plants brought by Mr. Bree in the former year have increased abundantly by seed, and retain at the present time, 1847, all their peculiarities, in several gardens and under varied treatment.

Root-stock a small brownish knob, producing tufts of white

waved fibrous roots, and supporting 1 to 4 oblique, slender, tapering, solid, white bulbs, each inclosed separately in the tubular base of 1 or 2, rarely 3, leaves, which is tinged more or less with purple and sheathed with several brown scariose coats. Leaves spreading, decurved and waved, as thick as a goose-quill, fistular, cylindrical, or flattened or slightly grooved on the upper side, tapering to a bluntish point, glaucous, finely striate, the striæ minutely crenulate. Scape 12–18 inches high, arising collaterally with the bulb from the root-stock within the base of the leaves, which invests about a quarter of its length with a close cylindrical sheath, an inflation occurring just below the point of emersion, and a contraction and an internal septum in the continuation of the leaf just above*; it exactly fills the opening, and is clasped by its pale, narrow, filmy edge; it is nearly as thick as the leaves, and roughish, like them, with minutely crenulate striæ, solid throughout, or more or less hollow in the upper part, often much waved, and usually nodding just before the flowers expand; it overtops the leaves in consequence of their curvature, although they often exceed it in length; in this respect however they vary. Umbel of numerous crowded flowers, on stalks of scarcely their own length. It is hemispherical, sometimes almost globose, but becomes somewhat "conical" or "pyramidal" as the central flowers, which expand first and have the longest stalks, begin to collapse. Spatha of 2 roundish, mucronate, concave, scariose valves, which rarely separate to the base, not so long as the flowers. Perianth bell-shaped, obsoletely trigonal; segments flat, elliptical, separated a little by narrow sinuses at the base, slightly overlapping each other in the middle, their apex a little complicate, rounded and almost emarginate in the inner ones, more acute, rather suddenly tapered, and slightly reflexed in the outer; their colour violet purple, varying in tint, with a dark greenish line along the middle, extending not quite to the apex. Stamens half as long as the perianth, their filaments slightly connected, smooth, white or purplish, subulate, alternate ones from a rather wider and more deeply hollowed base; anthers bluish, pollen almost white. Germen pale,

* In barren plants of one leaf, the place of these is indicated by a short solid portion in the otherwise fistulose leaf, with a small external seam just below it, a little above the inclosed bulb.

spheroid-trigonal, of three lobes, with a deep round honey-pore at the base of each below a small pale triangular depression. Style arising centrally from the base of the lobes of the germen, which closely encompass it, subulate, varying in length, of the same tint as the filaments. Stigma simple, or very slightly incrassated. Capsule but half as long as the shrivelled perianth, 3-celled, the septa in the middle of the valves, which separate to the base. Seeds 2 in each cell, irregularly triquetrous, black, shining. Spatha, perianth, filaments and style, all persistent, becoming, when the flowering is past, first red, then grey and scariose. The flower is occasionally white, and the anthers then are white also.

Notwithstanding its constancy under nine years' cultivation, it is with much hesitation that we propose this plant as a distinct species. *A. Schœnoprasum*, the *Chives* of the kitchen-garden, is but half as large, and differs much in appearance by its upright habit and clustered growth; the leaves of its perianth are narrower, and taper more gradually to a sharper point. In the form usually cultivated the scape is often variously angular, and as soft and fistulose as the leaves; and both leaves and scape, though minutely striated, are perfectly smooth. This last character, apparently important, is however of no value, for in wild plants of the same habit precisely, kindly sent by Mr. John Thompson from different places in the neighbourhood of Walltown, Northumberland, the striæ are rough, as in our Cornish plant. We have three other nearly allied *Allia* in cultivation: one of them, presumed to be the *A. foliosum* of Clairon, in *DeCand. Fl. Fr. v. 3. p.* 725 (although Redouté's figure is not much like it), is twice as large as our *A. sibiricum*, which it much resembles in its flowers; but the leaves of these are more acute and more spreading, the stamens longer in proportion, with the anthers dull yellow, and the scape and leaves are perfectly smooth and without raised striæ. The leaves of this curve a little outwards, and it probably is the "*A. Schœnoprasum β. Linn.*" of Murray in *Comm. Soc. Gott. v.* 6. *p.* 33. *t.* 4. Another we believe to be *A. Schœnoprasum β. major* of Gawler, in *Bot. Mag.* 1141. It is a smaller plant than the last-mentioned, with which it agrees in smoothness; its flowers open widely, and their segments are acute and not imbricate; its anthers are bluish, as in our plant. The third alluded to we cannot refer

Jan.ʳʸ 1ˢᵗ 1848.

EPILOBIUM lanceolatum.

Spear-leaved Willow-herb.

OCTANDRIA Monogynia.

GEN. CHAR. *Calyx* in 4 segments. *Petals* 4. *Capsule* oblong, inferior. *Seeds* feathered.

SPEC. CHAR. Leaves stalked, lanceolate, irregularly toothed. Stem obsoletely angular. Stigma slightly lobed. Root fibrous. Scions none.

SYN. Epilobium lanceolatum. *Sebast. et Mauri Fl. Rom. Prod.* 138. *t.* 1. *f.* 2. *Tenore "Fl. Nap. v.* 4. 170."; *Syll.* 189. *Guss. Fl. Sic. Prod. v.* 1. 459. *Bertol. Fl. Ital. v.* 3. 298.
E. montanum var. lanceolatum. *Bab. Man. ed.* 2. 115. (not of *Koch*?)

RECORDED in Babington's *Manual* as a native of Jersey. Our specimens were sent by Mr. Thwaites from Stapleton, near Bristol, where the plant grows abundantly on sandstone, as well as at Hanham in the same neighbourhood. Mr. Thwaites has also noticed it near Tintern, Monmouthshire. It flowers from July to September.

Root perennial, fibrous, producing in early spring rosules of long bright green sulcate leaves. Stem 1–2 feet high, erect, obscurely and very bluntly angular, chiefly towards the base, clothed with a minute ascending curved pubescence, intermixed in the upper parts, as well as on the ovary and calyx, with erect, straight, gland-tipped hairs. In very small plants the stem is simple; in larger it produces axillary branches, which again are simple or beset in like manner with ramuli. Sometimes the branches are abbreviated to mere tufts of small leaves, but in favourable circumstances each is terminated like the stem by a slightly flexuose raceme, nodding before flowering, and gradually lengthening and becoming erect as the flowers expand. Leaves flaccid and mostly dependent, opposite below, alternate upwards, the uppermost among the flowers very small, all oblong-lanceolate, tapering to a somewhat alate stalk of moderate length; they are of a dull green, smooth to the naked eye and generally more or less shining, yet covered on both sides with microscopic curved ascending

hairs; their margins wavy, irregularly and rather distantly denticulato-serrate. Flowers axillary, small, on pedicels not ¼ the length of the slender, deeply sulcate, quadrangular germen. Calyx-segments tapering to a point, ⅓ shorter than the petals, to which they are appressed and with which they soon fall off. Petals obcordate with a shallow notch, white at first, changing to a delicate rose-colour; their veins pellucid and colourless. Stamens and style much shorter than the petals. Lobes of the stigma short, sometimes closed, sometimes separated. Capsule ascending, slender, linear, at length 2–3 inches long.

The plant is often much tinged with red. The angles of the stem are very obsolete: a scarcely perceptibly raised line usually runs down from each edge of the stalks of the stem-leaves, and a most obscure furrow from their midrib. Towards the base of the stem the edges of the opposite leaf-stalks sometimes coalesce at their base and form no decurrent line, as Fries says is the case with the leaves of his *E. purpureum*, of which he regards the "caulis bifariam sulcatus" an exclusive character. From other points however in his description we dare not quote that plant, of which we have not seen specimens.

E. lanceolatum is very nearly allied to *E. roseum* (*t.* 693), but that plant has a less pubescent or quite naked stem with two sharp and two blunt angles, broader elliptical leaves with sunken veins, and more deeply notched petals, the veins of which are rose-coloured. *E. montanum* is satisfactorily distinguished by its round stem, nearly sessile leaves, rounded and almost cordate at the base, and more deeply lobed and spreading stigma: its spring rosules too consist of shorter and less sulcate leaves. So inconspicuous indeed are the angles of the stem in *E. lanceolatum* that the Italian authors describe it as terete; and Mr. Thwaites well observes, that there are varieties of *E. montanum* which a not very practised eye might mistake for *E. lanceolatum*: such, according to Bertoloni, is the *E. montanum* var. *lanceolatum* of German authors. Bertoloni mentions a difference which our plants do not show,—that the capsules of *E. lanceolatum* are shorter. Italian specimens gathered by Mr. Woods, who has shown them to Mauri, differ in no respect from ours, except that a flower remaining on one of them appears to have been rather larger.—W. B.

Fig. *a* is from a specimen in Mr. Borrer's garden; *b*, a flower some time after expansion, from the Bristol plant; the larva of *Sphinx Elpenor* was feeding on the leaves.

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HYPNUM sylvaticum.

Wood Hypnum.

CRYPTOGAMIA Musci.

GEN. CHAR. *Fruitstalks* lateral. *Peristome* double: outer one of 16 teeth; inner, a membrane cut into 16 equal segments, and usually with intermediate filiform processes. *Calyptra* dimidiate.

SPEC. CHAR. Dioicous. Stems decumbent, scarcely branched. Leaves subdistichous, ovate, two-nerved. Capsule cylindrical, cernuous. Operculum beaked, half as long as the capsule.

SYN. H. sylvaticum. *Schwaegr. Suppl. v.* I. *pt.* 2. 182. *t.* 87. *Bridel Bryol. Univ. v.* 2. 550.

H. denticulatum pennatum, pinnulis rarioribus simplicibus rectioribus. *Dillen. Hist. Musc.* 267. *t.* 34. *f.* 6.

OUR figure is taken from fine specimens, kindly sent in a growing state from Dunkerron, Ireland, by Dr. Taylor, Sept. 1847.

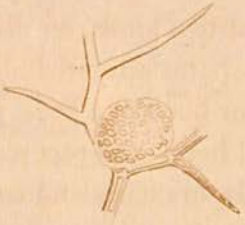
This species has been often confounded with *Hypnum denticulatum*, and even in the present day few bryologists are well acquainted with it. Dillenius has the credit of having well distinguished them; and since his time Schwaegrichen and Bridel have upheld the claims of this species. A variety of *H. denticulatum* has been mistaken for it by Hedwig and others. The two species very frequently grow intermixed, and are almost equally common.

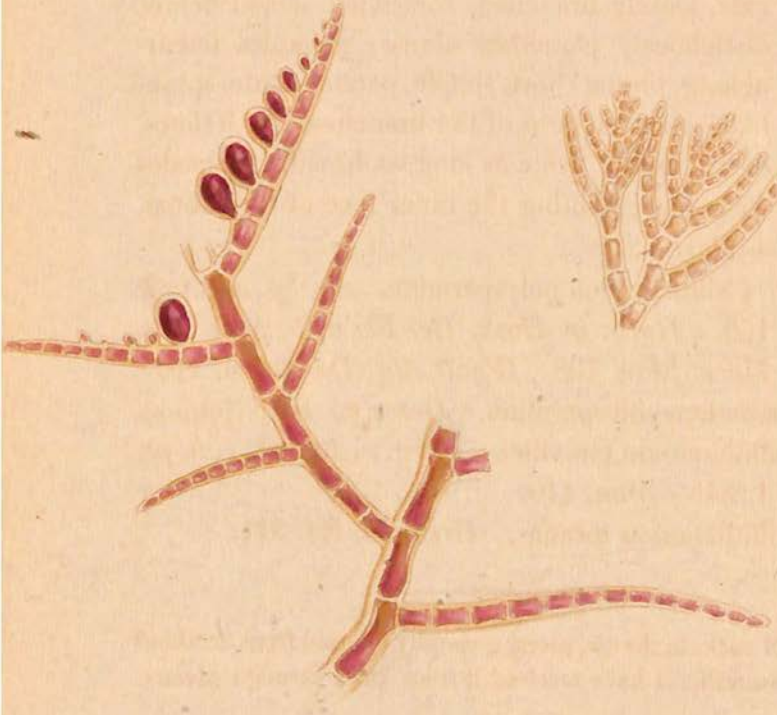
H. sylvaticum is essentially distinguished from *H. denticulatum* by its dioicous inflorescence: it is also more robust and succulent. Stems ascending, arched, very seldom branched, except at the base, from which point proceed one or more de-

scending stolons beset with radical fibres intermixed with minute leaves. The stem-leaves are either distichous or occasionally subsecund, more or less concave, ovate, not acuminated, of a darker green than those of the other species, and less crowded, the double nerve reaching half-way; when dry somewhat twisted and contracted, scarcely glossy, entire, the margins not reflexed. Perichætial leaves reflexed at the summit. Fruitstalks reddish, scarcely twisted when dry. Capsule more or less cernuous, often horizontal, paler and larger than that of *denticulatum*; the apophysis more evident, not furrowed when dry, and the mouth then dilated. Peristome pale yellow, the outer teeth erect below, the upper part suddenly bent and hooked. Annulus of larger cellules and the spores larger than in the other species. Operculum longer and evidently rostrate, half as long as the capsule and sometimes longer.

The figure in this work, *t.* 1260, of *H. denticulatum* has been referred by Bridel to this species without any just cause, for neither the description nor the figure of the operculum and capsule is at all suitable. The example from which the figure was taken is not very characteristic of the species, and is probably a mountain form, common on Snowdon and elsewhere. *H. denticulatum* is a variable species: one state of it (which we suspect to be what is usually mistaken for *H. sylvaticum*) has hermaphrodite flowers; but that species is never dioicous, the capsule is always more erect, and has (with the peristome) a reddish tint; when dry it is somewhat furrowed and suddenly constricted below the mouth. Leaves not much contracted and not at all twisted when dry, obliquely ovate, acuminate, glossy, obscurely two-nerved at the base. Operculum short and conical, always less than half the capsule in length. Fruit ripening at an earlier season.—W. W.

Fig. 1, capsule, young; 2, older, before the fall of the operculum; 3, old capsule moistened with opercula of various forms; 4, perichætial leaves; 5, stem-leaves; 6, male flowers; 7, capsule and leaves of *H. denticulatum*.





CALLITHAMNION polyspermum.

Many-fruited Callithamnion.

CRYPTOGAMIA Algæ.

GEN. CHAR. *Filaments* mostly pinnate, rarely dichotomous. *Fruit* of two kinds, on distinct plants: (1) external tetraspores scattered along the ultimate branchlets or borne on little pedicels; (2) roundish or lobed berry-like receptacles (favillæ) seated on the main branches and containing numerous angular spores.—*Harv.*

SPEC. CHAR. Tufts globose. Filaments slender, delicate, loosely branched, somewhat naked below, distichously plumulate above; plumules linear-oblong, pinnæ short, simple, patent, acute, spine-like. Articulations of the branches 4 or 5 times, of the ramuli twice as long as broad. Capsules (tetraspores) lining the inner face of the pinnæ. —*Harv.*

SYN. Callithamnion polyspermum. *Ag. Sp. Alg. v.* 2. 169. *Harv. in Hook. Br. Fl. v.* 5. *pt.* 1. 342. *Harv. Man.* 108. *Wyatt Alg. Damn. no.* 140.
Ceramium polyspermum. *Desm. no.* 1015 (junius).
Callithamnion Grevillei. *Harv. in Br. Fl. v.* 5. *pt.* 1. 345; *Man.* 110.
Callithamnion roseum. *Grev. Fl. Ed.* 311.

ON rocks in the sea, pretty generally diffused from Scotland to Cornwall. I have received it from Brest through Messrs.

Crouan, but, as it is not in the extensive collections distributed by M. Lenormand, it is probably a rare species. It should be observed too, that in the plant from Brest the articulations of the fertile pinnæ are longer than in specimens from the opposite side of the Channel, and that the tetraspores are by no means confined to the pinnæ.

Forming globose rose-red or purplish tufts, from 1–3 inches long, much-branched, adorned above with alternate oblong plumules, whose subulate pinnæ are alternate with articulations scarcely twice as long as broad, and bearing on their upper side a row of obovate or elliptic tetraspores. Ultimate plumules subfastigiate. The favilliferous individuals are far less regular. Favillæ large, globose. We are indebted for our specimens to Mr. Ralfs.—M. J. B.

Jan.y 1st 1848.

2938.

CALLITHAMNION Hookeri.

Hooker's Callithamnion.

CRYPTOGAMIA Algæ.

GEN. CHAR. *Filaments* mostly pinnate, rarely dichotomous. *Fruit* of two kinds, on distinct plants: (1) external tetraspores scattered along the ultimate branchlets or borne on little pedicels; (2) roundish or lobed berry-like receptacles (favillæ) seated on the main branches and containing numerous angular spores.—*Harv.*

SPEC. CHAR. Stem setaceous, inarticulate or spuriously jointed, simple, set with one or more series of alternate spreading flexuous branches, the smaller of which are jointed; all furnished with very patent pinnated ramuli or plumules; ultimate pinnules divaricating, their joints twice or thrice as long as broad. Capsules along the inner faces of the ramuli near the base.

SYN. Callithamnion Hookeri. *Ag. Syn. Alg. Scand.* xxvii.; *Sp. Alg. v .2.* 178. *Harv. in Brit. Fl. v. 2. pt.* 1. 341; *Man.* 106.

Callithamnion lanosum. *Harv. l. c.*

Callithamnion roseum var. Scopulorum. *Lenormand no.* 429.

Conferva Hookeri. *Dillw. t.* 106.

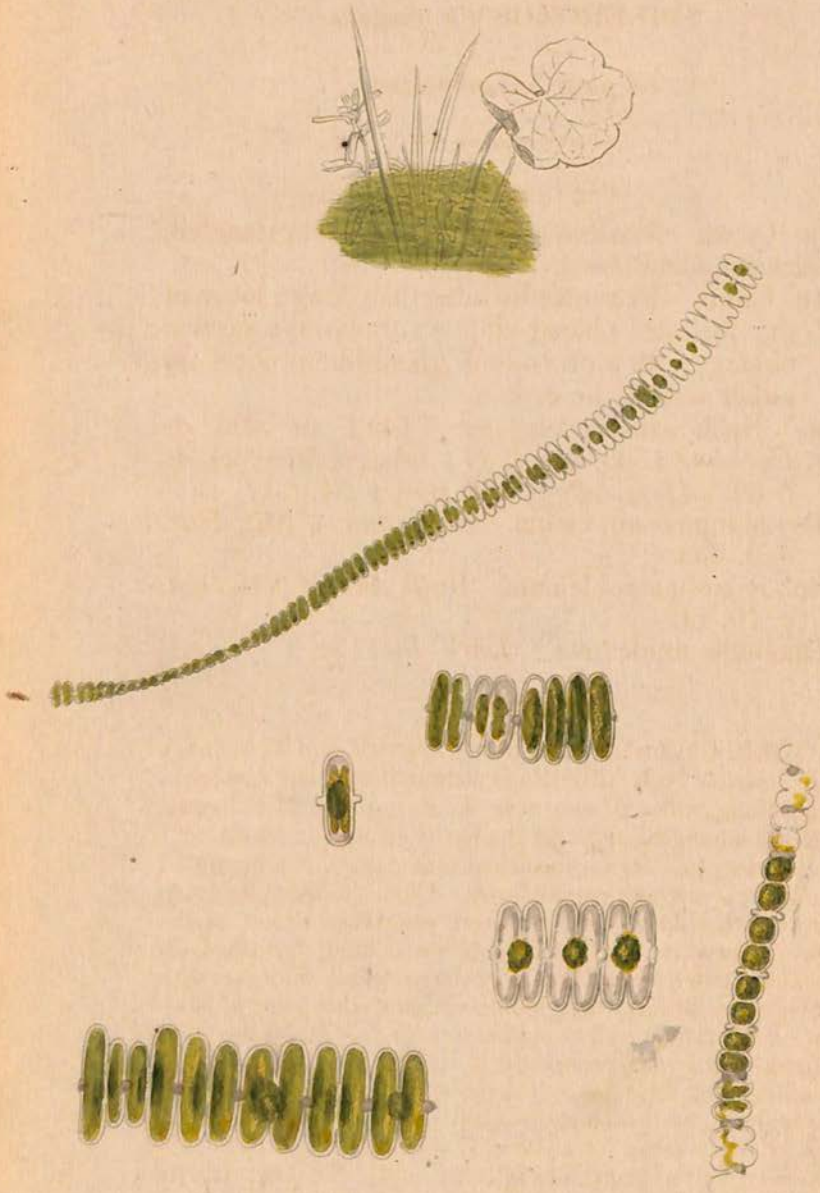
Callithamnion Scopulorum. *Ag. l. c. p.* 106.

ON rocks or attached to seaweed, distributed here and there from Scotland to Cornwall and on the French side of the Channel, but not in abundance. The species is named in honour of Sir W. Hooker.

Main stem 1–3 inches high, giving off many lateral branches which are divided again or form at once ovate bipinnate plumules, with alternate patent pinnæ and pinnules. Tetraspores elliptic, principally confined to the upper side of the pinnæ and representing the pinnules. Articulations of the principal divisions clothed with articulate tubes descending from the branches or branchlets, and often themselves bearing ramuli; articulations of the pinnæ and pinnules about as broad as long.

The favilliferous plants are more corymbose, and their branches not patent. Favillæ large, irregular, axillary, sometimes binate; tips of the branches forming imperfect favillæ, the grains of which are single joints.

Our specimens were sent from Penzance, in March 1842, by Mr. Ralfs.—M. J. B.



Jan.y 1.st 1848.

2939.

SPHÆROZOSMA elegans.

Elegant Sphærozosma.

CRYPTOGAMIA Algæ.

GEN. CHAR. *Frustules* compressed, concatenated, cloven almost to the centre.

SPEC. CHAR. Frustules broader than long; lobes of the frustules oblong-elliptic; transverse surface oblong, with a projecting gland-like process on either side in the centre.

SYN. Sphærozosma elegans. *Cord. in Alm. de Carlsbad* 1835, *t.* 4. *f.* 37; *Observ. Micr.* 21. 4. *f.* 30. *Hass. Algæ, v.* 1. 348. *t.* 84. *f.* 1.

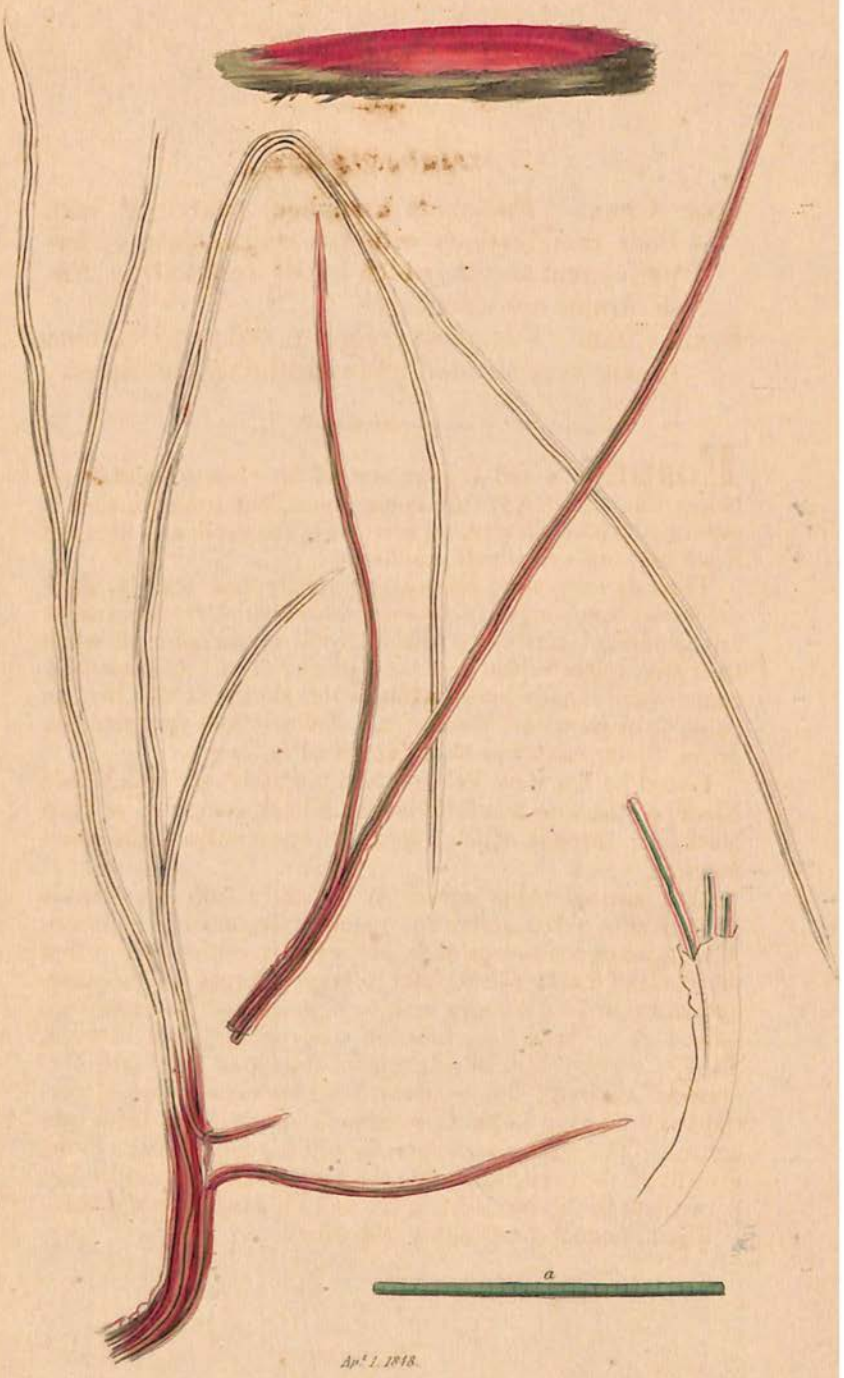
Desmidium compressum. *Ralfs Ann. of Nat. Hist. v.* 9. 253.

Sphærozosma unidentata. *Ralfs Ann. of Nat. Hist. v.* 16. 14.

Odontella unidentata. *Ehrb. Inf.* 154.

POOLS, Chyan-hâl Moor near Penzance, and Towednack Moor near St. Ives. Mr. Ralfs communicated our specimen. It has been gathered also near Tunbridge by Mr. Jenner. It occurs entangled amongst the leaves of aquatic plants.

Extremely gelatinous, furnished with a mucous tube, which is however sometimes very obscure. Chains of frustules much compressed, elliptic, deeply cloven, sometimes almost to the centre; transverse surface of junction oblong, furnished on either side with a little gland-like process, which combines with its neighbour to form the globule visible at the point of junction. Endochrome at first uniform with a pale line at the point of division, at length condensed in the centre, showing in the transverse view four linear processes, two at either extremity. One segment of the frustule is often larger than the other. This I believe arises from the development of two new half-frustules from the centre of the older ones. This is precisely the order in which the new frustules are formed in the genus *Isthmia*.—M. J. B.



Apr.l 1. 1818.

2940.

CŒNOCOLEUS Smithii.

Red Cœnocoleus.

CRYPTOGAMIA Algæ.

GEN. CHAR. *Filaments* branched, contained with their ramifications within a tough, more or less permanent *sheath*, which bursts irregularly. *Endochrome* annulated.

SPEC. CHAR. Filaments creeping, red; endochrome green, very slender, and indistinctly annulated.

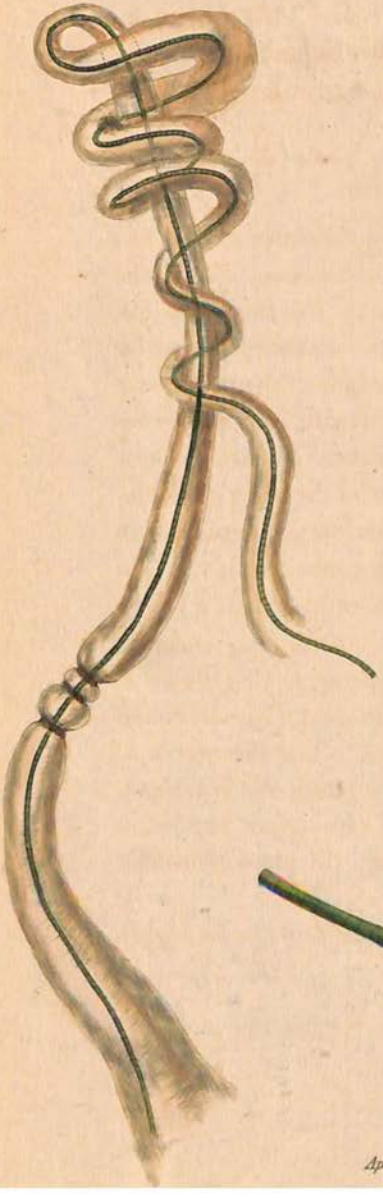
FORMING a red rugose mat of interlacing threads on boggy soil, where it is very conspicuous, but from which it is separated with difficulty, on account of the roots and fibres of heath and moss to which it adheres.

Threads elongated, branched laterally and acutely, their outer coat becoming cartilaginous, within which fresh branches are generated and creep within it till it is ruptured, when their free apices repeat the same phænomena. Occasionally some of the ramuli burst through the sheath at the base in pairs, as in genuine *Scytonemata*. Endochrome very slender, green, the articulations about as broad as long.

Found by the Rev. W. Smith in the midst of Corfe Castle Moor, on the side of a little heathy hillock composed of deep black peat, through which a spring of water oozes in the driest weather.

This curious Alga agrees in structure with the species figured at *t.* 2920 under the name of *Scytonema cirrhosum*. The inspection however of an authentic specimen proves that the plant of Capt. Carmichael is very different in structure, and is nearer to *Calothrix* than to *Scytonema*. The structure indeed is as nearly as possible that of *Conferva distorta*, *E. B. t.* 2577. Mr. Borrer's plant then may be named *Cœnocoleus cirrhosus*, and we must hope for some future opportunity of figuring Capt. Carmichael's species from fresh specimens. The distinctive character of the genus consists in the growth of the branches within the tough, skinny, more or less permanent outer coat.—M. J. B. and G. H. K. THWAITES.

Fig. *a*, endochrome highly magnified.



Ap.1 I. 1848.

DASYGLOIA amorpha.

Irregular Dasygloia.

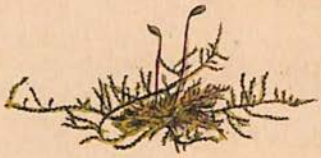
CRYPTOGAMIA Algæ.

GEN. CHAR. Gelatinous, amorphous. *Sheaths* of filaments, which are slightly branched, thick, mucous, cohering. *Endochrome* annulated.

SPEC. CHAR. . . . . .

THE genus *Dasygloia*, founded upon the above species, has many points of resemblance with *Cœnocoleus*, but differs in the mucous sheaths of its filaments coalescing, like those of a *Rivularia*, to form a solid gelatinous mass. In the species under consideration, the filaments, quite at the base of the plant, have rather a membranous than gelatinous sheath, and closely resemble those of a *Lyngbya*, in consequence of which the base of the mass is green; but in the centre of the plant each filament is furnished with a very thick colourless gelatinous sheath which is firmly coherent with those in contact with it. Towards the periphery of the plant these sheaths assume a brown colour, and become somewhat separate and distinct, rendering the surface shaggy, as shown in the accompanying figure *a*. Occasionally the tips of the filaments are wound spirally round the portion immediately beneath them. The discoverer of this interesting species, the Rev. W. Smith of Wareham, remarks that it occurs, mixedwith the *Cœnocoleus Smithii*, in a bog on Corfe Castle Moor, and that the plant is usually about the size of a swan's egg.—G. H. K. T.

Fig *b*. represents a portion of the endochrome more highly magnified than the other figures.



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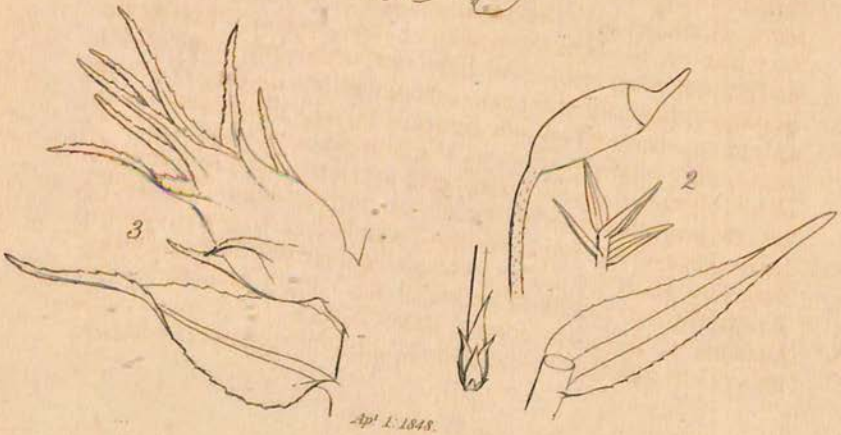


Apl 1. 1848.

2942. *fig.* 1.

HYPNUM pumilum.

Dwarf Hypnum.

CRYPTOGAMIA Musci.

GEN. CHAR. *Fruitstalks* lateral. *Peristome* double: outer one of 16 teeth; inner, a membrane cut into 16 equal segments, and usually with intermediate filiform processes. *Calyptra* dimidiate.

SPEC. CHAR. Dioicous. Stem creeping, hair-like, very minute; branches very slender. Leaves spreading, ovate, serrulate, nerved half-way. Fruitstalk rough. Capsule ovate, cernuous. Lid beaked.

THIS extremely minute and delicate species, whose branches are scarcely discernible by the naked eye, has probably been often overlooked from the resemblance of its foliage to that of *H. serpens*. It was found near Cork in Ireland, by the writer of this article, in December 1829; afterwards on the Romantic Rocks, Matlock, December 1833. He then received it from Mr. Borrer, gathered at Woodmancote, Sussex, March 1837, under the name of *H. Swartzii* β. Turn., and at length detected it, as a new species, in December 1842, growing on the side of an old quarry of red sandstone at Winwick near Warrington, bearing plenty of perfect fruit. It is now known to grow in several parts of England, on hedge-banks.

Stems creeping or procumbent, much interwoven, scarcely thicker than a human hair, irregularly branched, seldom pinnate. Branches very short and slender, mostly simple. Leaves very minute, those of the principal stem ovate-acuminate, the margin not recurved at the base nor decurrent, those of the branches distantly inserted, sometimes (as in the Winwick specimens, from which our figure is taken,) distichous, ovate, acute, very slightly concave, the margin somewhat reflexed, obscurely serrulate, shrinking very much when dry, the cellules rather large, nerve ceasing about the middle. Perichætial leaves very short, not covering the bulb-like vaginula, acuminate and recurved above, whitish, almost destitute of nerve. Fruitstalk not quite half an inch long, rough, reddish brown. Capsule of the same colour, ovate, cernuous, furnished with an evident annulus. Lid obliquely rostrate, generally a little

shorter than the capsule. Calyptra pale. Male flowers on separate plants, very small, roundish ovate; the perigonial scale ovate, very concave, nerveless. Anthers about 6, with a few short paraphyses or jointed filaments.

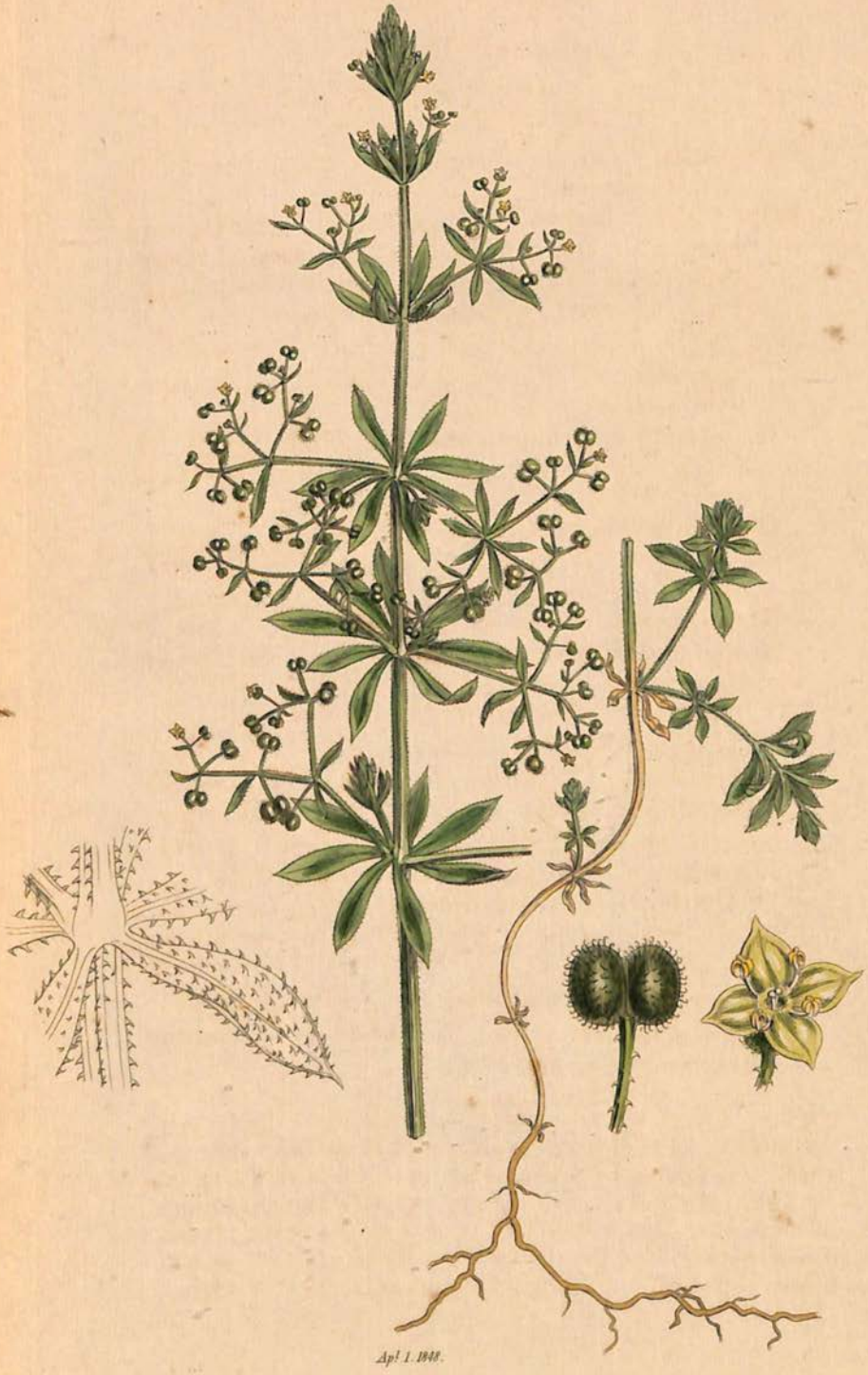
We have not ventured to publish this as new without having first carefully compared it with *H. Teesdalii*, Smith (*H. intricatum*, *Eng. Bot. t.* 202). That species has been little understood: Bridel, who had never seen the moss, strangely supposes it to be a variety of *H. riparium*; and even Mr. Teesdale, who first found it near Matlock, appears to have subsequently confounded it with *H. serpens*. It is identical with *H. Teneriffæ*, Montagne, and scarcely differs, if at all, from *H. rigidulum*, Bruch:—it is also *H. Schleicheri*, *var. β. curvisetum*, Schwaegr. and Bridel, and corresponds with an authentic specimen of Bridel's *H. laxopennatum*. It differs essentially from our *H. pumilum* in the following particulars:—Inflorescence monoicous. Leaves longer, narrower, more rigid, shrinking less when dry, lanceolate, often linear-lanceolate, (as well described in *Turn. Musc. Hib. p.* 150,) concave, the margin not at all reflexed, nerve broader, thicker, reaching almost or quite to the apex. Foliage more constantly distichous; and the fruit ripens in April. It appears to be confined to rocky and submountainous districts, occurring on moist shady rocks in North Wales, at Sedbergh in Yorkshire, and in Ireland. At Matlock it is said to have been found upon trees. The specimen figured in *Eng. Bot.* has the leaves a little broader than usual, almost as in *H. rigidulum*, which we now consider to be only a variety of this species.

H. prælongum in many of its characters comes very near to *H. pumilum*, but is permanently distinct in the cordate semiamplexicaul stem-leaves, whose margin at the base is always reflexed and more or less decurrent. A small variety of it grows with *H. pumilum* at Winwick and elsewhere, and is known at once by its strongly serrated leaves which do not shrink when dry. It is usually a much larger moss.

H. pumilum varies (as in the Cork and Sussex specimens) with leaves more crowded, scarcely if at all distichous, more rigid and more evidently serrulate, and with longer lids. In this state it comes nearer to *H. prælongum*.

H. Swartzii var. β, Turn. *Musc. Hib. p.* 151. *t.* 14. *f.* 2, may belong to our moss; but specimens given to us as authentic by Mr. Borrer, but not exactly corresponding with the figure given, have the leaves truly distichous, elliptic-lanceolate, with larger cellules, and more evidently serrated. We have found a similar moss near Bangor (N. Wales), in August 1843, with a few old capsules, but not in a fit state to determine the question.—W. W.

Fig. 1 *a*, stem leaf; *b*, leaf from a branch; *c*, male flowers and antheridia: Fig. 2, *H. Teesdalii*; and Fig. 3, *H. prælongum*, for comparison.



Apl 1. 1848.

2943.

GALIUM Vaillantii.

Vaillant's Cleavers.

TETRANDRIA Monogynia.

GEN. CHAR. *Corolla* rotate. *Fruit* dry, not crowned with the calyx.

SPEC. CHAR. Leaves 6-8 in a whorl, linear-lanceolate, with reflexed marginal prickles. Stems rough with reflexed prickles. Peduncles axillary, many-flowered, cymose. Fruit bristly.

SYN. Galium Vaillantii. *DeCand. Fl. Fr. v.* 4. 263; *Syn.* 301; *Prod. v.* 4. 608 (excluding the synonym of *Waldst. et Kit.*).

G. agreste α. echinospermon. *Wall. Sched.* 59 (excluding the synonyms of *Camerarius, Morison,* and *Waldstein*).

G. agreste α. *Mert. et Koch Deutsch. Fl. v.* 1. 207.

G. spurium β. *Reich. Fl. Germ. Excurs.* 207. *Bréb. Fl. Norm.* 138.

G. spurium β. Vaillantii. *Bab. Man. ed.* 2. 156.

G. spurium B. echinospermum. *Desp. Fl. Sar. et May.* 118.

G. spurium *b.* *Michel Fl. Dauph.* 214.

G. Aparine β. *Lam. Encycl. v.* 2. 581.

G. Aparine β. Vaillantii. *Lois. Desl. Fl. Gall. ed.* 1. *v.* 1. 56. *Duby Bot. Gall.* 251. *Koch Syn. Fl. Germ. ed.* 2. 363. *Godr. Fl. Lorr. v.* 5. 311.

G. Aparine *d.* *Boreau Fl. Cent. Fr. v.* 2. 221.

G. Aparine s. v. Vaillantii. *Coss. et Germ. Fl. Par.* 364; *Atlas, t.* 23. *f.* D. 3 (by no means characteristic).

Aparine vulgaris, semine minori. *Tourn. Inst.* 114. *Vaill. Par.* 14. *t.* 4. *f.* 4. excépt *b.* (excluding the synonym of *Camerarius*).

THIS small Cleavers, first distinguished by Tournefort and excellen ly figured by Vaillant, was named *Galium Vaillantii* by DeCandolle in honour of that eminent botanist, which name must remain, being prior to that of Wallroth. It was discovered by Mr. George Stacey Gibson, F.L.S., in cultivated grounds in the neighbourhood of Saffron Walden in

Essex, in September 1844, growing among corn, clover and potatoes in several places round that town. Mr. Joshua Clarke finds it at Chesterford, four miles from thence. This still remains the only British station on record. It has not appeared in any local list except that of Saffron Walden.

Galium Vaillantii differs essentially from *G. Aparine*, to which it has been referred as a variety by several continental botanists. The most distinctive characters are:—the numerous small green flowers in cymes; the fruit very much smaller and more glossy, owing to the hooked bristles being less closely set; the linear-lanceolate leaves of a brighter green colour: moreover it does not climb hedges. Three years' observation in Essex would not warrant this being stated as a constant habit, were it not that all the foreign authors acquainted with this plant as distinct from *G. Aparine* are apparently aware of the fact. The nodes being smooth, as stated by DeCandolle, will not form a character; they are sometimes hairy in both species, though less frequently so in *G. Vaillantii*.

Many of the above remarks were suggested and all are confirmed by Mr. Gibson, who, with Mr. Joshua Clarke, has carefully watched the plant in its native soil in different stages of growth. It appears wonderful that so many good botanists should have overlooked the striking differences between this plant and *G. Aparine*. It is not impossible that *G. Aparine* β. *minor* of DeCandolle in his *Prodromus*, which is "not uncommon" in corn-fields, may have been erroneously taken for *G. Vaillantii*, both in this country and on the continent, the fruit being very small because the whole plant is diminutive. There is undoubtedly much more affinity to *G. spurium*, Linn., long since found near Forfar by the late George Don: the difference in that plant, being principally the want of bristles on the fruit, it may fairly be considered a variety of *G. Vaillantii*, the more perfect plant and therefore the type. Wallroth observes, "*G. spurium* in systemate hodierno titulum vagum præbet, et hinc ob errores innumeros melius omittitur." This is true as applied to the typical form of a species, but it may still be used as the designation of a variety, and in this case it is right to retain it for that form to which Linnæus affixed it, *G. Vaillantii* remaining the specific name.

The arrangement will be:—

Galium Vaillantii α, here figured from fresh native specimens communicated by Mr. G. S. Gibson.

β. spurium, G. spurium, *Linn.*, *E.B.* 1871.

G. agreste β. leiospermon, *Wall. Sched.* 59*.—E. F.

* A similar arrangement may be adopted in respect to *G. parisiense* and *G. anglicum*:—

G. parisiense α, G. parisiense, *Linn.*, not yet found in England.

G. litigiosum, *DeCandolle*.

β anglicum, G. anglicum, *E.B.* 281.

2944.

ŒNANTHE fluviatilis.

River Water-Dropwort.

PENTANDRIA Digynia.

GEN. CHAR. *Calyx* of five lanceolate teeth. *Petals* obcordate with an inflexed point. *Fruit* ovate, cylindrical or subturbinate, crowned with the long suberect styles. *Carpels* more or less corky with five blunt ridges. *Interstices* with single vittæ.

SPEC. CHAR. Stem ascending, floating, attenuated and creeping at the base. Leaves bipinnate; segments simple or pinnatifid, of the submersed leaves wedge-shaped, pellucid, cut, with many parallel nerves. Umbels lateral, opposite to the leaves. Fruit broadly elliptical, thrice as long as the spreading styles.

SYN. Œnanthe fluviatilis. *Coleman in Ann. Nat. Hist. v.* 13. 188. *t.* 3. *Bab. Man. Brit. Bot. ed.* 2. 141.

Œ. Phellandrium β. fluviatilis. *Bab. Man. ed.* 1. 131.

Millefolium aquaticum. *Dill. in Raii Syn.* 216.

THIS plant was first noticed by Dillenius near Blenheim in Oxfordshire. It abounds in the streams of Hertfordshire and Essex. Mr. Borrer has found it in Kent, Mr. Babington in Hampshire, Cambridgeshire and Oxfordshire, and Mr. Bloxam in Leicestershire. It is probable that many of the recorded stations of *Œ. Phellandrium* belong to this species, which, as far as our observation goes, is much the more common plant in the middle and south-east of England.

Œnanthe fluviatilis is never healthy except when growing in running water. Its aquatic leaves (as noticed by Dillenius) are often to be found in abundance in situations where it seldom or never flowers, and the great difference existing between them and those of *Œ. Phellandrium* first drew attention to the plant. Those of *Œ. Phellandrium* have their segments quite capillary, resembling Fennel; while those of our plant have

their segments wedge-shaped, about one-fifth of an inch broad, pellucid, and with from 5–9 nearly parallel nerves: they are lobed and unequally cut at the apex with deep and sharp laciniations.

The ascending stem, thickened and fistulose upwards, is beautifully constructed for sustaining the flowering part of the plant erect above the stream. It is strongly contrasted with that of *Œ. Phellandrium*, which is formed for the purpose of supporting the plant in an erect position on the surface of the softest mud.

The upper portions of the two species are so similar that it is not surprising that one has so long passed for a coarse variety of the other. The leaves of *Œ. Phellandrium* are generally tripinnate, whereas those of *Œ. fluviatilis* are seldom more than twice pinnate, with the segments simple or pinnatifid and broader than those of *Œ. Phellandrium*. The umbels are lateral, opposite to the leaves, on angular stalks of various lengths, with about ten rays, and seldom more than one general bractea, if any. Partial involucre of numerous linear-lanceolate leaves, shorter than the pedicels. Flowers white, resembling those of *Œ. Phellandrium*, but more generally perfect. Fruit about as long as the pedicels, broadly elliptical, somewhat compressed laterally, three times as long as the stylopode and somewhat spreading styles. It is about one-third larger than that of *Œ. Phellandrium*, with narrower ridges and broader channels.

Our plant is certainly perennial, whereas *Œ. Phellandrium* is biennial, as we have convinced ourselves by many years' observation of it in stations where it flowers only in alternate years. Koch's plant, which he thinks may be propagated by stolons, is probably *Œ. fluviatilis*, for we have never observed anything of the kind in *Œ. Phellandrium*, and its seeds are produced so abundantly as to make such a provision unnecessary.

Our figure is taken from a specimen gathered in the river Lea near Hertford in July 1844. The fruit (which is rarely allowed to ripen) was obtained in September of the previous year.

The old character of *Œnanthe Phellandrium* will require to be corrected as below in order to distinguish between it and *Œ. fluviatilis*.

Œ. Phellandrium. Stem erect, thickened at the base, with many whorled fibres. Leaves tripinnate, their segments simple or pinnatifid; those of the submersed ones capillary. Umbels lateral, opposite to the leaves. Fruit ovate, twice as long as the nearly erect styles.—W. H. C.

2945.

CREPIS setosa.

Bristly Hawksbeard.

SYNGENESIA Polygamia Æqualis.

GEN. CHAR. *Involucre* double; inner of one row; outer of short lax scales; rarely imbricate. *Receptacle* naked or fimbriated. *Florets* all ligulate. *Fruits* terete, narrowed upwards or beaked. *Pappus* in several rows, hair-like, white.—*Bab.*

SPEC. CHAR. Stem branched, leafy. Lower leaves lyrate or pinnatifid, runcinate; upper sagittate. Flowers always erect. Peduncle and involucre eglandulose, beset with spreading setiform hairs. Outer scales narrow, spreading. Fruits all equally contracted into a moderate beak.

SYN. Crepis setosa. *Haller fil.* "*in Roem. Arch. v.* 1. *pt.* 2. 1."; *in Naturw. Anzeig.* 90. (1818.) *Gaudin Fl. Helv. v.* 5. 135. *Sebast. et Mauri Fl. Rom.* 271. *Koch Syn. ed.* 2. 502. *Bab. Man. ed.* 2. 191.

C. hispida. *Wald. et Kit. Pl. Rar. Hung. v.* 1. 42. *t.* 43. *Willd. Sp. Pl. v.* 3. 1601. *Loisel. Fl. Gall. ed.* 2. *v.* 2. 196.

Barkhausia setosa. *DeC. Fl. Fr. ed.* 3. *v.* 4. 44. *et Suppl.* 450; *Icon. Gall. Rar.* 7. *t.* 19; *Prod. v.* 7. 155. *Duby Bot. Gall.* 298. *Coss. et Germ. Fl. Par.* 438. *Godr. Fl. Lorr. v.* 2. 84. *Bluff et Fing. Comp. Fl. Germ. ed.* 2. *v.* 2. 471. *Reich. Fl. Exc. v.* 1. 255?

B. hispida. *Lejeune et Court. Comp. Fl. Belg. v.* 3.

110. *Reich. Fl. Exc. v.* 1. 256. *Wimm. et Grab Fl. Siles. v.* 2. *pt.* 2. 176.
Crepis calycibus muricatis. *Haller Hist. Stirp. Helv. v.* 1. 14. *n.* 32.

WE cannot refuse admission to a plant that has occurred in Essex, Herts, Surrey, the Isle of Wight, Lancashire and Fifeshire, although introduced, we doubt not, with foreign seeds, and perhaps, like *Centaurea solstitialis* and some others, but a transient visitant, as the younger Haller, who gave it its name, believed it to be in Switzerland*. It was first found in this country by Mr. G. Stacey Gibson, at Thaxted, Essex, in 1843, and has since been observed, always among clover, in several other places around Saffron Walden, and at some miles apart, by that gentleman and Mr. Joshua Clarke. Under their guidance our specimens were gathered at St. Aylotts, in the autumn of 1847. It is in flower from July to September, and even later when undisturbed. The figure was made from a plant which had grown up again after mowing.

Root biennial, fusiform, branchy. Stem in uninjured plants single, erect, about two feet high, slightly fistulose, sulcate, branched and leafy throughout, stained with red towards the base and at the setting off of the branches, beset with scattered, spreading, longish, bristle-like but soft, simple hairs, least numerous and sometimes almost wanting about the middle part of the plant. Branches axillary, ascending, subdivided, terminating in loose and irregular corymbs of flowers. Leaves bright green, very variable in shape and in the number and nature of their segments, which are however all acute; their margins not revolute: radical and lower stem-leaves tapering down from a large terminal lobe to an alate stalk dilated at its base, sometimes lyrate, sometimes merely pinnatifid, with the segments in either case pointing backwards, sometimes scarcely

* "In transalpinis vulgo, cis Alpes seminibus tantum cum advenis provenit, mox disparet." *Naturw. Anzeig. l. c.*—We have not seen the former account by the same author in *Roemer's Archiv*, 1796.

more than sinuate or coarsely toothed; intermediate leaves semiamplexicaul, the dilated auricles usually cut into many segments, the lower of which point downwards and often form a sagittate base; upper leaves gradually smaller and less toothed, tapering from the widened, less laciniate and more distinctly sagittate base; the uppermost forming narrow-lanceolate or linear bracteas under the flower-stalks, with or without a sagittate base: the midrib and nerves of the leaves beneath are hispid like the stem; their disk, especially in the lower parts of the plant, mostly sprinkled with less conspicuous hairs, such as fringe also the edges. Flower-stalks erect in all stages, slender, of unequal lengths, simple or forked, bristly, leafless, or bearing a minute bractea or two near the flower. Heads shortish; scales acute, very bristly; those of the outer row spreading, linear or narrow-lanceolate, with an extremely narrow whitish margin; those of the inner row twice as long, erect, tapering from a wider base, the pale margin wider, the keel prominent, dark, but with a little white cottony pubescence among the bristles, as there is also on the stalks immediately below the flower. There are no glands on any part of the plant. Florets glabrous, with short teeth, pale yellow, the outermost with or without an external stripe of red. Styles green. Fruits tapering, after the flowering is past, to a beak which ultimately equals the body of the seed in length, ribbed, pale brown; the ribs and beak serrulate with minute ascending teeth. Pappus not greatly exceeding the involucre, erect, snowy white, composed of numerous fine hairs beset with microscopic denticles which point upwards. The pits of the receptacle have a minutely jagged edge, fringed with a few short hairs.

Crepis setosa is well distinguished by the conspicuous spreading seta-like hairs on the stem and branches, but especially on the flower-stalks and involucres. In colour and general appearance it most resembles, among our native species, the more luxuriant varieties of *C. virens*, mistaken till lately by British botanists for *C. tectorum* of Linnæus, and figured as such in *Eng. Bot. t.* 1111. Its flowers too are of about the

same size, being shorter and smaller than those of *C. taraxacifolia, t.* 2929. It agrees however with the latter in having the pappus supported on a contracted elongation of the fruit itself, not, as in some genera of this tribe, a proper stipes articulated with the fruit. This beak characterizes the *Barkhausia* of Moench; but it appears to offer rather a sectional than a generic distinction.

Crepis bannatica of Willdenow in the posthumous *Suppl.* to his *Enumeratio, p.* 55, has been referred to *C. setosa*; but among some other discrepancies, he describes the cauline leaves as never sagittate, and the calyculus as glabrous. Reichenbach, under "*Barkhausia setosa,*" quotes *Crepis aspera*, Suter. There is no species so named in the *Fl. Helv.* of Suter, but the author mentions *C. aspera* to give his reasons for believing it different from his own *C. setosa* (*v.* 2. *p.* 156). If this is our plant, Suter seems to have given it independently the same name as Haller. We have the authority of the latter author for quoting his father's *n.* 32. in the *Hist. Stirp. Helv.* published in 1768, which appears to be the earliest notice of the plant.—W. B.

Oct.r 1.st 1818.

2946.

RANUNCULUS tripartitus.

Three-lobed Crowfoot.

POLYANDRIA Polygynia.

GEN. CHAR. *Calyx* of 5, rarely 3 leaves. *Petals* 5 or more, with a nectariferous pore at the base. *Pericarps* without awns.

SPEC. CHAR. Stem floating. Submersed leaves (when present) divided into capillary segments spreading in all directions; floating leaves subpeltate, tripartite; segments triangular-obovate, 2-4-fid. Carpels unequally obovate, blunt, with a subterminal point. Receptacle setose.

SYN. Ranunculus tripartitus. *DeCand. Icon. Pl. Gall. Rar.* 15. *t.* 49; *Fl. Franç. v.* 5. 637. *Duby Bot. Gall.* 8. *Gren. et Godr. Fl. France, v.* 1. 20.

R. tripartitus *α.* micranthus. *DeCand. Syst. v.* 1. 234. "*Godr. in Mém. de la Soc. de Nancy,* 1839. 8."

R. innominatus. *Lond. Cat. of Brit. Plants* (name only). 1.

STEM floating or creeping, slender, slightly furrowed, a little branched, rooting at the joints. Leaves, in our plant, all floating, subpeltate, deeply divided into three triangular-obovate segments; the lateral with 2 or 4, the intermediate segment with 3 terminal crenæ. Submersed leaves on foreign specimens divided into numerous capillary segments spreading in all directions, as in *R. aquatilis.* Upper stipules free, *i. e.* only attached at their base, not adnate to the petiole. Peduncles opposite to the leaves, scarcely so long as the petioles. Flowers small. Sepals blunt, boat-shaped, dark green with a tinge of purple, furnished all round with a narrow whitish diaphanous margin. Petals as long as or a little longer than the calyx, obovate, rather acute, much narrowed and slightly yellow below, with three distant veins. Nectary with an elevated border on the lower side only. Stamens few, 5 to 10, taller than the pistils. Style long, terminal, subulate, slender at its base, deciduous. Carpels glabrous, inflated, whitish

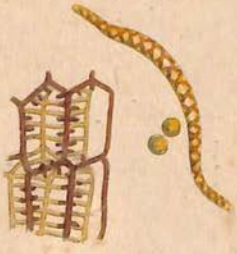
when ripe, obovate, rounded at the end with a minute subterminal apiculus, wrinkled when dry. Receptacle globose, setose.

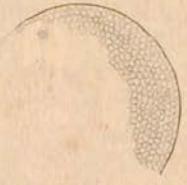
The plant before us belongs to a most difficult group of species or varieties, which well deserve to have that attention paid to them in Britain which has resulted in the discovery of numerous allied forms in France. Our plant is undoubtedly that of DeCandolle, but not of Nolte. The *R. tripartitus* of Cosson and Germain (*Atl. Fl. de Par. t.* 1. *f.* 7, 8) can scarcely be intended for our plant, unless a wrong carpel is there figured, and it may be remarked that all reference to those cuts is omitted by Godron in his peculiarly elaborate account of these plants in the *Flore de France*. It should however be stated that specimens named *R. tripartitus* by M. Lenormand, gathered at Angers, show great variation in the position of the remnant of the style in the ripe carpels. In most cases it is as represented in our plate, but in others in the same specimen its position is nearly that shown in the *Atlas de la Flore de Paris*.

The want of submersed leaves on the British plant causes it to seem more nearly allied to *R. hederaceus* than is really the fact; it is probably deprived of them by living in shallow water: its setose receptacle is a sufficient distinction. Its true allies are some little-known plants, viz. *R. ololeucos* (Lloyd), *R. Petiveri* (Coss. et Germ.); *R. Baudotii* (Godr.), *Batrachium marinum* (Fries); and *R. confusus* (Godr.), *R. tripartitus* (Nolte), *R. Petiveri* (Koch in *St. Deutsch. Fl.*). *R. confusus* and *R. Baudotii* agree with *R. aquatilis* in having greatly adnate stipules; *R. ololeucos* has the free stipules of our plant, but differs from it by having longer peduncles, much larger and wholly white petals, and a style enlarged at its base and persistent. In the absence of personal experience of the characters of these plants, we do not venture to express an opinion upon their claims to rank as species: if only varieties, they must be considered as well-deserving of attention.

We are indebted to its discoverer, Mr. H. C. Watson, for the specimens figured, which were gathered by him in shallow ditches on the sandy and peaty heath near Claremont House, Surrey, flowering in May; the writer has found it this summer, 1848, near Haverfordwest.—C. C. B.

A magnified *dry* nut is figured to show the shape and transverse wrinkles.





JUNGERMANNIA lanceolata.

Lance-leaved Jungermannia.

CRYPTOGAMIA Hepaticæ.

GEN. CHAR. Common receptacle of the fruit none. *Perianth* or *calyx* monophyllous, tubular (rarely absent). *Capsule* 4-valved, terminating a peduncle which is longer than the perianth.

SPEC. CHAR. Stem prostrate, nearly simple. Leaves spreading, roundish-oblong, oblique. Perianth ascending, subarcuate, clavato-cylindrical, depressed at the summit and minutely umbilicate.

SYN. Jungermannia lanceolata. *Linn. Sp. Pl. ed.* 2. 1597. *Hooker Brit. Jungerm. t.* 18; *Engl. Flora, v.* 5. *pt.* 1. 108. *Lindenb. Hep. Eur.* 71. *n.* 70.

Liochlæna lanceolata. *Nees ab E. in Syn. Hepat.* 150.

Jungermannia palustris, minima, repens; foliis subrotundis, densissimis, læte virentibus. *Micheli Nov. Gen.* 8. *t.* 5. *f.* 6 *and* 7.

THE plant figured at *t.* 605 of this work, under the name of *Jungermannia lanceolata*, having been proved to be *J. scalaris* (see Hooker's *Monograph*, *t.* 18 and 61), it has become necessary to add a figure of the true plant, which was first ascertained to be British by Mr. Borrer, who found it a few years ago at the Harrison's Rocks, near Tunbridge Wells. The specimens here depicted were gathered in December 1847, in the upper part of the vale of the Yorkshire Esk (Cronkley Gill), where it forms patches, often of many feet square, on the surface of moist rocks which contain a large proportion of ferruginous and aluminous matters. A tuft sent to Mr. Borrer was by him preserved under glass until it fruited in April last (1848). We had previously (December 1842) observed it in the lower part of the same valley, within a few miles of Whitby. The *J. lanceolata*, said by Mr. Teesdale, in his *Plantæ Eboracenses* in the 2nd volume of the *Linnæan Transactions*, to grow on the western side of the same district (Hawnby Hill, near Helmsley), may possibly be the veritable

racters are the *arcuate cylindrical perianth, not plicate upwards*, truncate and subumbilicate at the apex. Another character, taken from the male inflorescence, "stamina in axillis foliorum superiorum *immutatorum denudata*," appears to be founded on a mistake; for in the numerous specimens we have examined we have uniformly found the perigonial leaves to have their bases hollowed out for the reception of the anthers, precisely as in most of the true *Jungermanniæ*. *Liochlæna* does not seem to us to be established on so firm a basis as are most of the genera in the *Synopsis Hepaticarum*: some *Jungermanniæ* (e. g. *J. Muelleri* and *corcyracea*) have a perianth of the same form, though not arcuate; but in all other particulars they stand widely apart from it; and as there is something peculiar in its habit, it may be allowed to retain the rank of a separate genus, until the discovery of species more closely resembling it than any at present known shall either justify its separation, or render it expedient to reunite it to *Jungermannia*.—R. Spruce.

A portion of the capsule is highly magnified to show the barred cells.

Oct. 1st 1848.

2948.

THOREA ramosissima.

Much-branched Thorea.

CRYPTOGAMIA Algæ.

GEN. CHAR. *Frond* gelatinous, cylindrical, filiform, compound, densely clothed with short, patent, articulated, byssoid threads which bear scattered, pyriform, simple *spores*.

SPEC. CHAR. Frond much-branched, dark green, becoming purple when dry.

SYN. Thorea ramosissima. *Bory Ann. Mus.* 12. *t.* 18. *f.* 1; *Naturf. Fr. Mag. v.* 2. 1808, 227. *t.* 6. *f.* 1. *Ag. Sp. Alg. v.* 2. 124; *Syst. Alg.* 56. *Duby Bot. Gall. v.* 2. 977. *Harv. Man. Br. Alg.* 120. *Kütz. Phyc. Gen.* 326. *t.* 16. *f.* 1. *Hass. v.* 1. 65. *Moug. & Nest. no.* 795. *Desm. Pl. Crypt. de la France, no.* 1612.

Thorea hispida. *Desv. Flore de l'Anjou*, 16.

Thorea Lehmanni. *Hornm. Fl. Dan. t.* 1594. *f.* 1. *Lyngb. Hyd. Dan.* 53. *t.* 13.

Conferva hispida. *Thore Mag. Encycl. v.* 5. 398. *t.* 5.

Conferva hirsuta. *Thore Essai d'une Chloris du Dép. des Landes*, 442 (1803).

Conferva flexuosa β. γ. *Bory It. v.* 2. 366.

Batrachospermum hispidum. *DeC. Syn.* 12; *Fl. Fr. v.* 2. 60.

Chordaria Thoreana. *Wallr. Comp. Fl. Germ. v.* 4. 25.

THIS beautiful plant was first introduced to our Flora by Dr. Harvey in his *Manual*, who admitted it on the statement of Mr. Templeton, that he found it in a pool of a bog

in Donegal; which account, though its usual habitat is in rivers, is confirmed by the occurrence of the Alga in Zealand in a similar position. Its claim however to admission into our Flora is now set at rest by the discovery of it in great abundance in the Thames at Walton by Mr. McIvor; and Mr. Borrer, to whom I am indebted for a specimen, has lately found it in the same locality. It can scarcely, I think, be doubted that Dr. Harvey is quite right as to its affinities, which are with *Batrachospermum*.

Frond growing on wood or other substances, attached by a little scutate disk, or, as in Mr. Borrer's specimens, clasping by its creeping base the stems of *Fontinalis*; from a few inches to three feet or more in length, dark olive-green, changing to purple when dry, gelatinous, much-branched, consisting of a dense central thread (composed of much-branched radiating filaments with short obtuse articulations, some of which are terminated by pyriform spores) and clothed with regular patent simple or branched flocci, consisting of articulations many times as long as broad, and giving off principally near the base on short ramuli solitary, binate or ternate pyriform spores, which are either naked below or furnished at their base with a whorl of two or three threads. The threads when placed in diluted spirits of wine become wrinkled and the endochrome contracts.

Fig. 1, portion of branch magnified; fig. 2, section of branch magnified; fig. 3, more highly magnified section showing spores or sporoform bodies springing immediately from the inner substance; also the usual sessile fruit; fig. 4, stipitate capsules on the investing threads.—M. J. B.

Oct. 1st 1848.

2949.

TRIFOLIUM strictum.

Upright Round-headed Trefoil.

DIADELPHIA Decandria.

GEN. CHAR. *Flowers* more or less capitate. *Pod* scarcely longer than the calyx, never bursting, but falling off entire.

SPEC. CHAR. Heads pedunculate, ebracteate, globose, dense. Flowers sessile, without bracteoles. Calyx at length campanulate, not inflated; teeth nearly equal, subulate, shorter than the corolla, at length spreading. Leaflets glabrous, striate, denticulate, elliptic-lanceolate; of lower leaves obovate. Stipules connate, rhomboid, pointless, fringed with glands. Pod slightly exserted; keel corky.

SYN. Trifolium strictum. *Linn. Amœn. Acad. v.* 4. 285; *Sp. Pl. ed.* 2. 1079 (in part). *Walds. et Kit. Pl. Hung. v.* 1. 36. *t.* 37. *DeC. Fl. Fr. v.* 4. 520. *Duby Bot. Gall.* 133. *Loisel. Fl. Gall. v.* 2. 118. *All. Fl. Ped. v.* 1. 302. *Seb. et Mauri Fl. Rom.* 257. *Reich. Fl. Exc.* 491. *Koch Syn. ed.* 2. 1020. *Bab. Man. ed.* 2. 78 (excl. syn.). *Coss. et Germ. Fl. Par.* 135. *Lloyd Fl. Loire-Inf.* 63.

Trifoliastrum pratense, annuum, erectum, minimum, &c. *Mich. Nov. Gen.* 29. *t.* 25. *f.* 7.

FAILING to obtain a wild specimen fit for the purpose, we have drawn a plant produced from seed brought from a rocky bank, about one hundred yards from the sea, by the

2950.

TRIFOLIUM incarnatum.

Great Harefoot Trefoil.

DIADELPHIA Decandria.

GEN. CHAR. *Flowers* more or less capitate. *Pod* scarcely longer than the calyx, never bursting, but falling off entire.

SPEC. CHAR. Head terminal, ebracteate, oblong-cylindrical. Calyx not inflated; teeth subulate, nearly equal, at length stellate. Leaflets broad, obcordate, villose. Stipules broad, membranous, nervose, with obtuse herbaceous apex.

SYN. Trifolium incarnatum. *Linn. Sp. Pl.* 1083. *Pers. Syn. v.* 2. 350. *Curt. Bot. Mag.* 328. *DeC. Fl. Fr. v.* 4. 528. *Seb. et Mauri Fl. Rom.* 251. *Koch Syn. ed.* 2. 187. *Godr. Fl. Lorr. v.* 1. 159.

T. alopecurum latifolium, spicâ longâ. *Barr. Icon.* 72. *f.* 697.

Lagopus maximus. *Park. Theatr.* 1106. *f.* 1. *Ger. Em.* 1192. (figure in both from *Lob. Stirp.* 499.)

β. pallidum. More humble. Flowers nearly white.

T. incarnatum *s. v.* pallidum. *Coss. et Germ. Fl. Par.* 134.

T. incarnatum β. Molinerii. *Ser. in DeC. Prod. v.* 2. 190. *Gaud. Fl. Helv. v.* 4. 588. *Duby Bot. Gall.* 130. *Reich. Fl. Exc.* 493. *Bab. Man. ed.* 2. 76. *Lloyd Fl. Loire-Inf.* 65.

"T. Molinerii. *Balbis H. Taur.* 1813, *app.* 1. 17." DeCand.

THE red-flowered *Trifolium incarnatum*, known in English gardens in the time of Gerarde and Parkinson, and brought into cultivation in our own days, in some parts of England, for early fodder, is now to be met with occasionally by road-sides and borders of fields; but the plant here figured is truly indigenous, growing in abundance among short grass in the Lizard district, flowering about the end of May and soon drying up. It is accompanied in some spots by *T. strictum* and *T. Bocconi*, neither of the three having occurred elsewhere in Britain. It was first observed near Landewednack, in 1838, by the Rev. W. S. Hore and the Rev. C. A. Johns, as related by Mr. Hore in the *Phytologist*, *v.* 2. *p.* 237; and Mr. Johns has since found it along the cliffs, at intervals, from Kynance to Cadgwith, "a distance of six miles:" see his letter in the *London Journ. of Bot. v.* 6, *p.* 475. These gentlemen assure us that the flowers are never red, and that the cultivation of *T. incarnatum* is unknown in that part of Cornwall. To both of them we are indebted for specimens.

Root annual, slender, with branched fibres. Stems several, about a span long, simple or merely divided just above the base, procumbent or ascending, stout, rigid, of few joints, not flexuose. Leaf-stalks shorter upwards, the uppermost scarcely longer than the stipules. Leaflets all but sessile, contiguous, broadly obcordate, the middle one sometimes cuneate, their upper edge crenate, but often obsoletely so; lateral ones unequally divided by the midrib. Stipules broad, amplexicaul, connected at the base by a small triangular film, united to the leaf-stalk more than half their length, scariose, with prominent branched green or reddish ribs, edges incurved, free apex herbaceous, waved, rounded with a minute point, entire or obscurely crenate; those of the uppermost leaf usually membranous throughout. Every part of the herbage densely clothed with long silky hairs, mostly appressed upwards. Head of numerous crowded sessile flowers, on a longish stalk, without bractea, ovate at first, cylindrical as the flowering advances, drooping when in seed. Calyx subcampanulate, not becoming inflated, tube shorter than the teeth, its 10 contigu-

ous ribs concealed by long spreading hairs, mouth scarcely contracted, teeth ascending whilst in flower, spreading widely in fruit, subulate, the two uppermost rather shorter and less deeply divided. Corolla buff-white, soon assuming a pale tinge of rose, exceeding the calyx by the whole oblong, rounded, entire limb of the standard; standard separate, wings and keel about equalling the calyx, concrete with the tube of the 9 connected filaments, which are dilated below the anthers (though less remarkably than in some species), the lowest considerably, the lateral ones gradually less; upper stamen distinct, its filament not dilated. Style not bent in its lower part. Legume inclosed, filmy, slightly thickened below the hardened style, and closely investing the one yellowish ovoid seed.

This species has much affinity with *T. stellatum*.—Godron remarks (*Flore de Lorraine*) that the spontaneous plant has white or rose, the cultivated red flowers. Our friend Mr. Woods has observed the *T. incarnatum* of Rome to be pale-flowered, but of stout and upright growth, and that by the mouth of the Loire to have just the English form. He suggests, we think justly, that this should be regarded as the type of the species, and the cultivated plant the variety. Though strikingly different in habit, we find nothing to distinguish the two as species. Perhaps the teeth of the calyx are rather more unequal in the wild plant, and the hairs on the stem rather less inclined to spread. Duby speaks of its stipules as less sphacelate: in the red-flowered plant they have usually a crimson bar between the membranous and the herbaceous part, which is wanting in the other; but we perceive no other difference.—W. B.

Jun.1 1st 1842.

2951.

APERA interrupta.

Interrupted Wind-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Spikelet* laterally compressed, 1-flowered, with a superior rudiment. *Glumes* 2; the superior larger, 3-nerved, about as long as the outer palea. *Paleæ* unequal, scarious, outer one dorsally awned. *Stigmas* nearly sessile. *Seed* free.

SPEC. CHAR. Panicle elongate, close. Anthers oval.

SYN. Apera interrupta. *Palis. de Beauv. Agrostog.* 31. *Koch Syn. ed.* 2. 904. *Reich. Iconog. cent.* 11. *t.* 32. *f.* 1419.

Agrostis interrupta. *Linn. Sp. Pl.* 92. *Willd. Sp. Pl. v.* 1. *pt.* 1. 362. *Schrad. Fl. Germ. v.* 1. 204. *Host Gram. Austr. v.* 3. 33. *t.* 48; *Fl. Austr. v.* 1. 97. *Roth Enum. v.* 1. 211. *Gaud. Agrost. Helv. v.* 1. 69. *Mert. und Koch Deutsch. Fl. v.* 1. 504. *Kunth Enum. v.* 1. 225. *Bertol. Fl. Ital. v.* 1. 394. *Coss. et Germ. Fl. Paris.* 630.

Gramen arvense, paniculatum, spicâ interruptâ. *Scheuchz. Agrostog.* 146.

Gramen capillatum, paniculâ angustiore et interruptâ. *Vaill. Bot. Par. t.* 17. *f.* 4.

ROOT fibrous. Stems several, erect, often procumbent at the base and kneed at the first or second node, from a few inches to a foot or more in height, terete, glabrous; nodes mostly purple. Leaves short, linear, narrow, scabrous above, the uppermost much longer than its sheath. Ligule long, acute, prominent. Panicle long, slender, close at all times,

interrupted. The upper part of the rachis rough; branches short, mostly branching throughout, rough. Spikelets oblong, small. Glumes unequal, acuminate, midrib scabrous towards the top, edges ciliated; outer smaller, 1-nerved; inner 3-nerved. Outer palea rather longer than the outer glume, shorter than the inner, rounded on the back, scabrous towards the bifid top; awn from the notch, 3, 4 or 5 times as long as the palea, very slender, rather wavy, rough. Inner palea shorter than the outer. Anthers scarcely protruded, short, oval, purple. Germen obovate. Styles nearly sessile, feathery. Rudiment of a second floret slender, subulate.

It cannot be considered as otherwise than remarkable, that additions to the list of our native flowering plants are still found in districts long known and frequented by botanists. The subject of our present plate was found in June 1847 close to the town of Thetford, in small quantity, by the Rev. W. W. Newbould. On July 4, 1848, the present writer, in company with him, traversed a considerable tract of the sandy district of Suffolk near to that town, and observed it in the greatest plenty; especially on and about Redneck Heath, where the specimens figured were gathered. They also found a few specimens of it on the Norfolk side of the town, but had not time to examine that part of the country carefully.

It is scarcely necessary to add, that the only other species of *Apera*, the *Agrostis Spica-venti* of *Eng. Bot. t.* 951, is distinguished from this species by the branches of its panicle spreading horizontally when in flower and its linear-oblong anthers. —C. C. B.

Jan.y 1st 1840.

2952.

SIMETHIS planifolia.

Two-coloured Simethis.

HEXANDRIA Monogynia.

GEN. CHAR. *Perianth* inferior, of 6 spreading 5–7-nerved leaves, slightly united at the base. *Stamens* inserted on the base of the leaves. *Filaments* woolly in the upper part. *Capsule* subglobose, 3-lobed, with 3 cells and 6 seeds.

SPEC. CHAR. . . . . .

SYN. Simethis bicolor. *Kunth Enum. v.* 4. 618.

Anthericum planifolium. *Linn. Mant.* 2. 224. *Willd. Sp. Pl. v.* 2. 136. *Brotero Fl. Lus. v.* 1. 534; *Phyt. Lus. Select. v.* 1. 103. *t.* 44.

A. bicolor. *Desf. Fl. Atl. v.* 1. 304. *t.* 90. *Poiret Encyc. v.* 5. 254.

Phalangium bicolor. *DeC. Fl. Fr. v.* 3. 209; *Red. Lil. t.* 215.

Bulbine planifolia. *Roem. & Sch. Syst. v.* 7. 449. *Bert. Fl. It. v.* 4. 131.

ROOT composed of a number of fleshy fibres which are generally in two sets; one springing immediately from the base of the stem, the other connected with it by a short rhizoma. Scape round and quite smooth. Leaves linear, flat, or somewhat keeled and folded at the upper part. Scape and leaves embraced by sheathing scales and surrounded by fibres, apparently the remains of leaves of the former year. Lower bract at the first division of the panicle leafy, the others membranous. Flowers panicled. Petals obtuse, purple externally, of a brilliant white within. Seed-vessel subglobose, with 3 lobes and 3 cells. Seeds 2 in each cell, attached by scale-like stalks to the middle of the inner angle of each cell.

This species was first adopted by Linnæus in his second *Mantissa* under the name of *Anthericum planifolium*, and there can be no doubt of the plant, although he describes the

scape as woolly and the flowers as red. On this account, perhaps, Desfontaines was induced to publish it in the *Fl. Atl.* as a new species. He describes it as having few leaves on the stem, and his figure indicates a leaf considerably below the panicle, a circumstance which does not occur on any of my specimens, French or English. DeCandolle and Persoon separated the plant from *Anthericum* and referred it to *Phalangium*; a name originally given to those *Antherica* whose filaments are without hairs, and therefore not well-suited to this species, where the filaments are densely hairy; to say nothing of the objection to a name already applied to a genus of insects. Roemer and Schultz, again separating it, placed it with *Bulbine*, an arrangement which is adopted by Bertoloni in his *Flora Italica*; and lastly Kunth described it as *Simethis*, distinguishing it from his *Phalangium* (*Anthericum* of most authors) by its hairy filaments, and from *Bulbine*, and the still more nearly allied *Arthropodium*, by having only 2 seeds in each cell. The position of the seeds and the way in which they are supported is the same, except that in *Arthropodium* there is a marked placenta to which the seed-bearing scales are affixed.

This species is not unfrequent on barren heaths in the west of France, but is only known to occur in England in one spot, on what was once part of Pople heath, but is now a plantation of firs, chiefly of *Pinus maritima*. The idea suggested by its locality is, that a patch of the plant, perhaps sixty feet in diameter, was intersected by a road made at the time of the plantation, *i. e.* I believe about forty years ago. There is no reason to suppose, either from its position or from its usual situations in France, that it was introduced with the trees, nor is it easy to imagine that it has since been brought to the place by any accident. It seems therefore probable that it was an original native of the country, and it may perhaps be met with in other parts of the extensive district characterized by the same soil, though the efforts made to discover it in any other spot have hitherto been unsuccessful. It was originally found in 1847, by Miss Wilkins of Westbury, and by her communicated to Dr. Lindley, who noticed it in the *Gardeners' Chronicle*. It is also said to have been found by a young botanist near Derrynane, in the county of Kerry, and to have been sent to Dr. Harvey for a name. Our specimens were gathered in June 1848. —J. W.

Jan.y 1st 1849.

2953.

MALVA verticillata.

Whorled Mallow.

MONADELPHIA Polyandria.

Gen. Char. *Calyx* double; outer [mostly] 3-leaved, inner trifid. *Carpels* circularly arranged. *Seed* solitary.

Spec. Char. Stem erect. Leaves 5-lobed, obtuse; basal sinus wide. Flowers fasciculate, unequally stalked. Corolla but little longer than the calyx. Calyx hairy; inner longer than the outer, with triangular segments; at length somewhat inflated, closing over the fruit. Fruit deeply sulcate; carpels with strongly ribbed sides and rounded edges.

Syn. Malva verticillata. *Linn. Sp. Pl.* 970. *Willd. v.* 3. 788. *DeC. Prod. v.* 1. 433. *Cavan. Diss. v.* 1. 70. *t.* 25. *f.* 3. *Jacq. Hort. Vind. t.* 40. *Hooker Lond. Journ. Bot. v.* 6. 257. *Bab. Man. Brit. Bot. ed.* 2. 58.

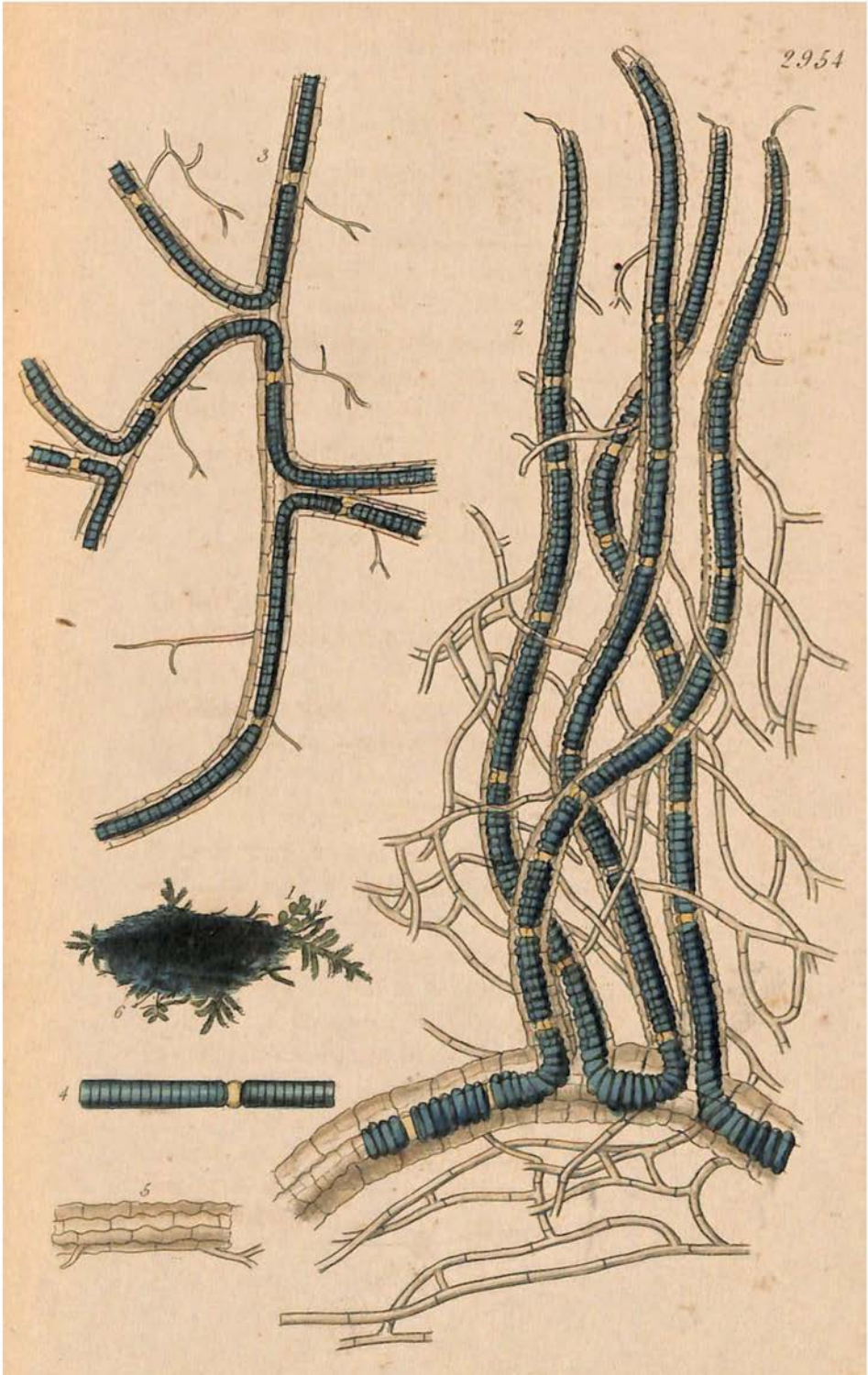
We know not by what accident this Mallow, regarded as a native of China, and not recorded as even naturalized in any country of Europe, has established itself at Llanelly in Caermarthenshire: there however it grows in corn-land, varying in different years in abundance according to the nature of the crop. It was first observed in 1843, in three contiguous fields, by Mr. James Motley, to whom we owe the specimens from which our figure was drawn, assisted for the very perishable flowers by garden plants raised from seeds from the same source.

Root annual, fusiform, with long fibres. Stem erect (except in very rich soil), from a few inches to 3 feet or even more in height, slender, straight, round, simple, or with merely a few ascending shoots from the lower part only; its surface often rugose. Leaves on long spreading stalks, pale dull green, with five obtuse crenate lobes, obsolete in the lower leaves, which

are almost round or reniform, gradually deeper, triangular, and the middle lobe often somewhat produced, in the upper part of the plant; the sinus at the insertion of the stalk wide-spreading. Stipules triangular, acuminate. Both stem and leaves sprinkled with inconspicuous hairs; those on the stem mostly in small fascicles, those on the leaves, except on the midrib and stronger nerves beneath, simple. Flowers very small, in axillary and terminal clusters, of few flowers and those on longer stalks towards the base of the plant, gradually more dense and numerous upwards. Flower-stalks rough with short hairs, usually very short in the larger clusters, with one or two twice as long as the rest. Calyx rough with longish mostly binate hairs: outer of spreading linear-lanceolate leaves; inner longer, cleft more than half-way into triangular segments, a little rugose; at length reticulated, somewhat inflated, closing over the fruit. Corolla about twice as long as the calyx: petals cuneate, from a narrow white claw connected at the base with the staminal tube, pale purple upwards, their inner surface sprinkled with minute colourless glands, apex emarginate, erose. Stamens white: tube half as long as the corolla, rough upwards with short deflexed hairs; anthers small. Styles connate below. Stigmas white, revolute, curled. Fruit deeply sulcate, hairless or nearly so; umbo of the axis of moderate size, conical, slightly prominent. Carpels 10–12, pale brown when ripe, orbicular-reniform, pressing each other only towards the base, whence the edges above are rounded, not marginate; their sides are strongly wrinkled, and the raised lines, being continued over the edges, are more faintly apparent on the back of the carpel, vanishing at the scarcely elevated dorsal line.

The larger clusters of flowers, although they originate on one side of the stem, often close around it so as to appear verticillate. The uppermost joints of the stem are so short that the clusters become confluent, and the subtending leaves are often small and deciduous: hence the stem has been erroneously described as terminated by a dense aphyllous spike.

M. crispa, which Linnæus, first in *Hort. Cliff. p.* 502, and subsequently at different periods in others of his works, proposed as a variety of *M. verticillata*, but finally, in *Syst. Nat. ed.* 10, gave as a distinct species, is a plant of stouter growth, branching in the upper part, and of a brighter green; its leaves, besides that their margin is curled, have usually seven lobes of a more lengthened outline, and the edges of the basal sinus overlap each other; the corolla is shorter in proportion to the calyx; the carpels are appressed to each other, so that their edges are not rounded; and the central umbo of the fruit is more prominently conical.—W. B.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2954.

RHIZONEMA interruptum.

Matted Rhizonema.

CRYPTOGAMIA Algæ.

GEN. CHAR. *Sheath* cellular, and furnished throughout its entire length with numerous branched and anastomosing rootlets. *Endochrome* distinctly annulated, interrupted here and there by a *connecting cell*. *Branches* in pairs, arising from the protruded endochrome.

SPEC. CHAR. . . . . .

SYN. Calothrix interrupta. *Carm. MSS. Harvey in Hooker's British Flora, v.* 2. 368; *Manual of British Algæ*, 158.

Stigonema interruptum. *Hassall Brit. Freshwater Algæ*, 229. *t.* 69. *f.* 2.

THIS interesting species differs so essentially from all the rest of the *Scytonemeæ* with which we are acquainted, that I have considered it necessary to establish a new genus for its reception. Its peculiar character consists in the investing sheath of the filament being composed of distinct cells, and furnished with numerous branched rootlets, which anastomose freely and thus bind the fasciculated filaments so firmly together, that it is very difficult to separate them so as to be enabled to ascertain the real structure of the plant.

The endochrome is cylindrical or occasionally somewhat moniliform, of an intense blue-green colour, and interrupted here and there by a connecting cell of a pale yellowish colour.

The mode of branching in this species is similar to that observed in *Scytonema Myochrous*, Agardh, and in *Conferva mirabilis*, Dillwyn,—namely, two branches, which at first are frequently united so as to form a loop, are given off from the same spot at right angles with the original endochrome, and from these branches others are subsequently produced in like manner. The plant occurs in wet heathy places, coating mosses, &c. with a dark blue-green stratum: when growing amongst *Palmelleæ* it assumes the form represented in figure 3.

The peculiar anastomosing rootlets with which this species is furnished, recal to mind similar filaments which assist in making up the structure of the thallus in many species of *Collema*, between which genus and the *Scytonemeæ* are many points of resemblance and affinity.

Figures 1 and 2 were drawn from specimens furnished us by Mr. Ralfs, who collected them at Machynlleth, N. Wales. Figure 3 was drawn from a specimen found near Bristol. A similar state has been communicated from Wareham by the Rev. W. Smith.—G. H. K. T.

Fig. 1, a portion of the plant as it appears when growing; figs. 2 and 3, magnified representations of different states of the plant; fig. 4, portion of endochrome with a connecting cell, highly magnified; fig. 5, portion of investing sheath without the endochrome, highly magnified.

2955.

LOLIUM linicola.

Slender Annual Darnel.

TRIANDRIA Digynia.

GEN. CHAR. *Spikelets* solitary, many-flowered, sessile, contrary to the excavated rachis. Upper *glume* wanting or minute.

SPEC. CHAR. Spikelets longer than the glume. Flowers elliptic. Roots annual, destitute of sterile shoots.

SYN. Lolium linicola. "*Sonder.*" *Koch Synops. ed.* 2. 957. *Bab. Man. ed.* 2. 401. *Hooker Lond. Journ. Bot. v.* 7. 528.

L. arvense. *Host Gram. Austr. v.* 3. 17. *t.* 25. *Schrad. Fl. Germ. v.* 1. 399. *Mert. et Koch Deut. Fl. v.* 1. 715. *Reich. Icon. Bot. v.* 5. (*Agrost. Germ.*) *t.* 4. *ff.* 1337–1339 (excluding everywhere the syn. of Withering and Smith).

GATHERED in July 1848, at Hurstpierpoint, Sussex, where it was first observed in the summer of 1844, growing sparingly amongst various crops, flowering in June. It is also recorded by Mr. Babington as found near Catterick, Yorkshire, by Mr. Ward.

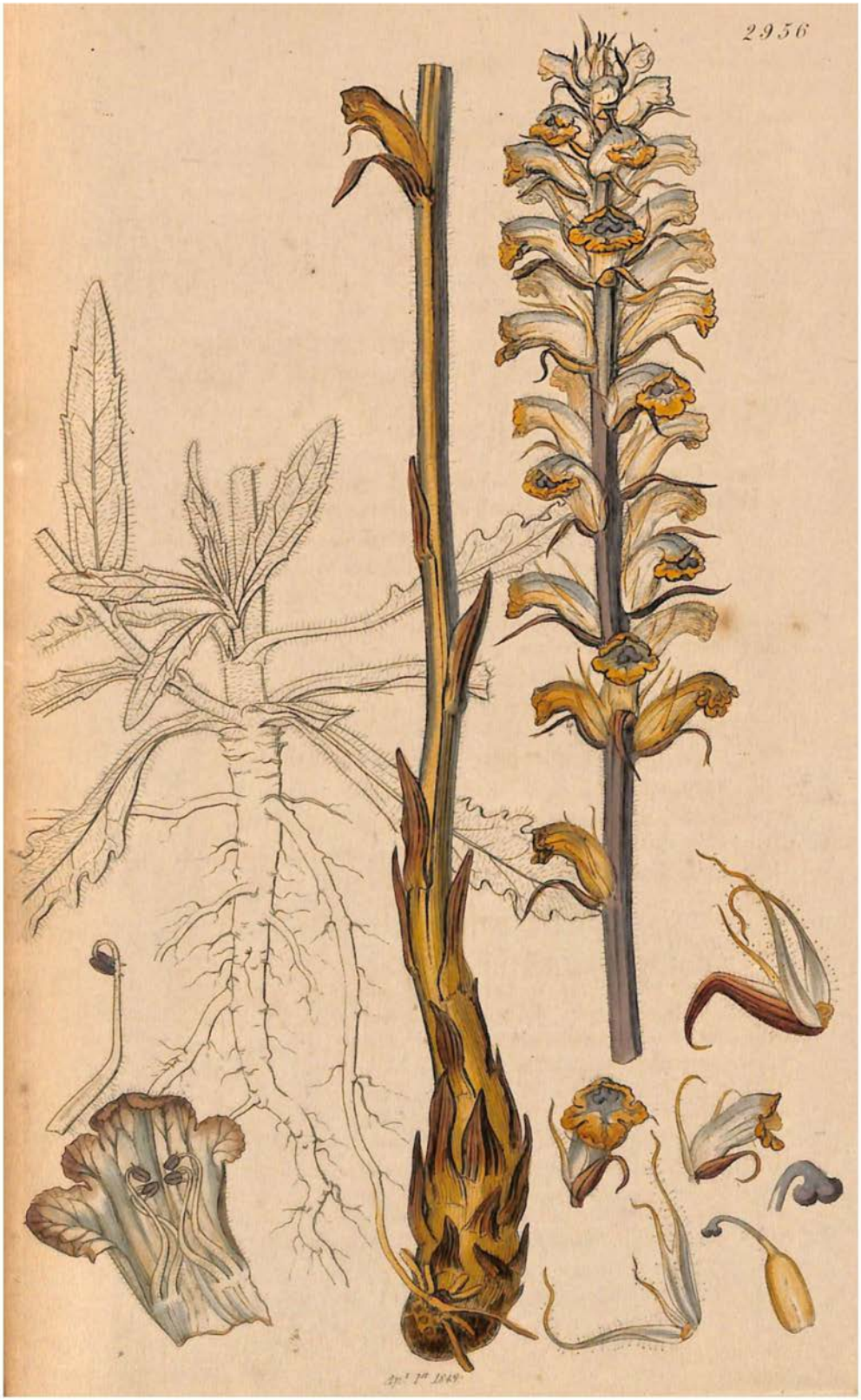
Plant annual. Roots fibrous, producing no barren shoots. Stems solitary, or several together from the same point, branched below, erect or bent at the lower joints. Leaves glabrous, their sheath slightly scabrous; ligule short, truncate. Culm slightly scabrous with minute aculei pointing downwards. Rachis scabrous in the upper part. Glume about one-third shorter than the spikelet. Spikelets of from 3–12 flowers, most commonly about 6, distant from each other by about one-third of their length. Outer palea elliptic, with 5 green nerves,

smooth (in my specimens), the margin scarious: awn from just behind a small notch in the top of the palea, about one-third its length, thickly covered on each side with small aculei pointing outwards: at times the awn is almost imperceptible. Inner palea scarious, with two green nerves, truncate above and, as well as the upper portion of the outer, finely ciliate. Anthers linear. Stigmas plumose. Caryopsis elliptic, often, when perfectly ripened, visible between the paleæ.

As might be expected from the habit of this plant, it varies with the nature of the crop amongst which it grows, as well as from the quality of the soil: in poor situations the plants are simple, erect, and the spikelets and flowers few in number, but under more favourable influences the stems become numerous, branched, bearing a proportionable number of spikelets and flowers. *Lolium linicola* is a much more slender plant than *L. temulentum* and its varieties, and in appearance more resembles some diseased states of *L. perenne*; but attention to its characters will prevent its being confounded with either. Its shorter glume will readily distinguish it from the former, and the absence of sterile shoots about the root keep it distinct from the latter, as well as from *L. italicum*, which has also differently-shaped flowers.

Lolium arvense of British authors is that state of *L. temulentum* in which the flowers appear awnless or slightly awned; but no dependence can be placed on this character, nor on the equally variable roughness of the culms. Seeds of the plant without awns, and with an almost smooth stem, have produced in cultivation the long-awned and rough-stemmed *L. temulentum*.

Cultivation through four descents has not changed the characters of *Lolium linicola*.—W. M.



Apr.1 7th 1849

2956.

OROBANCHE Picridis.

Picris Broom-rape.

DIDYNAMIA Angiosperma.

GEN. CHAR. *Calyx* of two often bifid sepals, or monosepalous and 4-fid. *Corolla* ringent, 4–5-cleft, its base fleshy and persistent. *Germen* 1-celled, 2-valved. *Seeds* numerous, upon opposite parietal placentas.

SPEC. CHAR. Sepals 1–3-nerved, entire or toothed in front below, gradually narrowed into one or two subulate points. Corolla tubular-bellshaped, slightly curved at the top and bottom, back nearly straight and compressed; lips denticulated, wavy; upper not notched, its sides porrect. Stamens inserted below the middle of the tube, hairy in their lower half within. Style glandular below in front and throughout its upper half. Stigma bilobed.

SYN. Orobanche Picridis. *F. W. Schultz in Koch Deutschl. Fl. v.* 4. 453. *Koch Syn. ed.* 2. 616. *Godr. Fl. Lorr. v.* 2. 181. *Coss. et Germ. Fl. Par.* 309; *Atl. Fl. Par. t.* 19. *f.* G. *Bertol. Fl. Ital. v.* 6. 438. *DeCand. Prod. v.* 11. 26.

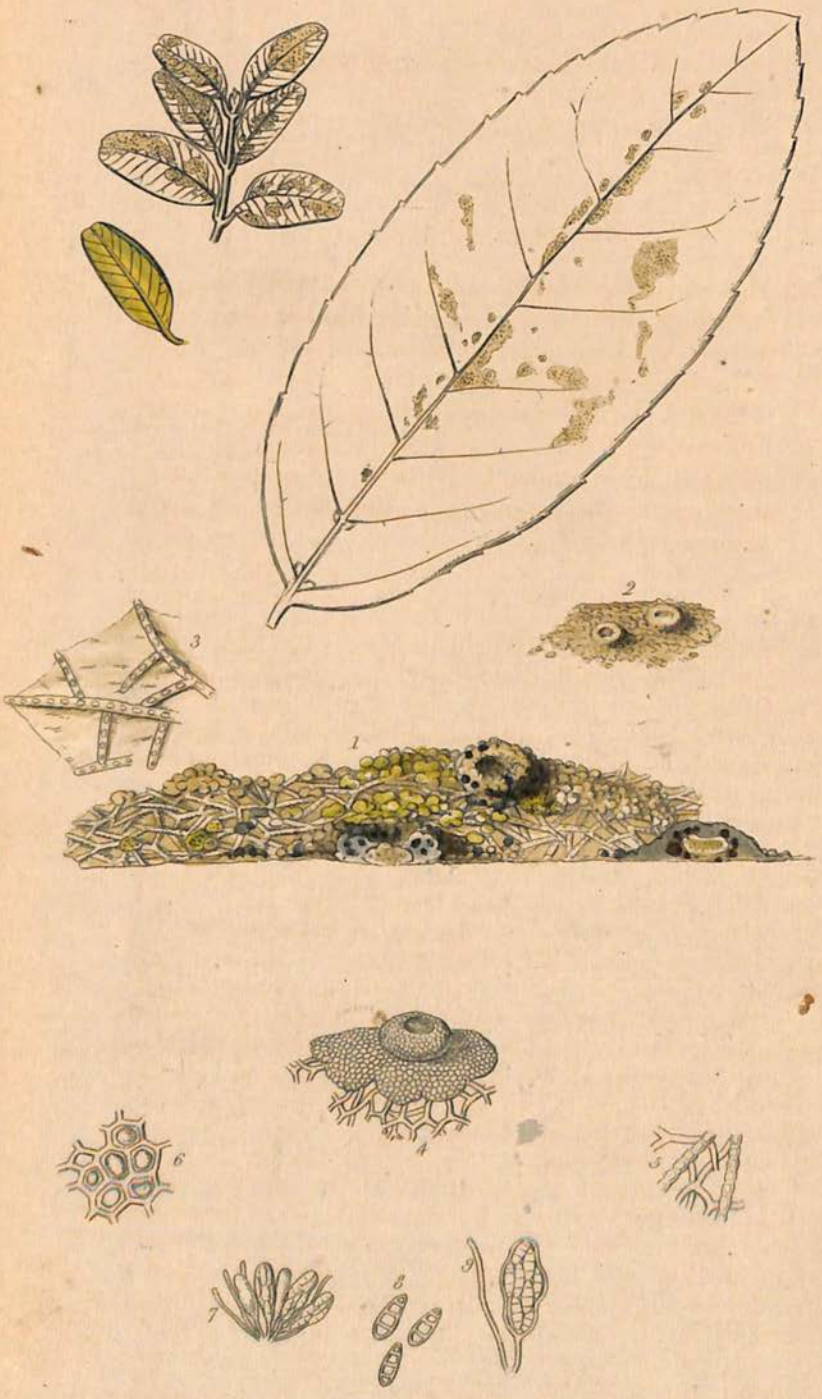
STEM 6–18 inches high, rather wavy, downy, especially in the upper part where the hairs are all glandular, pale purple or yellowish, angular. Tuberous base rather small, covered with ovate or ovate-lanceolate scales? Scales on the stem and bracts lanceolate-acuminate, many-nerved, downy. Bracts as long as, or longer than, the corolla. Sepals entire, gradually attenuated, 1-nerved, or with 2 or 3 or even more teeth, and several nerves, or with 2 long nearly equal similar 1-nerved lobes, bearing glandular crisped hairs externally, longer than the tube of the corolla. Corolla pale yellow, faintly tinged with purple upwards and with pale purple veins, glandular-hairy externally, tubular, compressed and keeled on the

back so as to present a triangular section, enlarging slightly to the mouth, a little curved at both ends, otherwise nearly straight; lips minutely denticulate and wavy at the edge, porrect; upper lip not notched, its centre prominent, sides at first folded in, afterwards porrect or slightly patent; lower lip of 3 roundish obtuse rather unequal lobes, middle one the largest and longest. Stamens adnate throughout nearly the lower half of the tube of the corolla, very hairy below within, glabrous above and externally below. Unopened anthers pale purple; open ones fuscous when dry. Style glandular-hairy below in front and throughout its upper half. Stigma bilobed, the lobes just touching, purple, finely granulated.

The descriptions of this plant do not quite agree: Bertoloni and Godron describe the filaments correctly, but other authors have not noticed that the hairs at their base are confined to the inner side; Koch says "staminibus . . . . . superne verrucoso-scabriusculis," a structure of which no trace exists in our plant, nor was it observed by the accurate Bertoloni. It is probable that both these errors, for such they appear to be, originated with Schultz, and were continued by authors to whom an opportunity of examining the plant in a fresh state was not afforded. There are other minute differences which scarcely deserve especial notice.

In characters this species is very like *O. minor* and *O. amethystea*. It has a different look from either of these; its sepals are not broad at the base and suddenly narrowed; the upper lip of the corolla is not notched or bifid, nor its back continuously curved nor remarkably curved at the base. In *O. minor* the filaments have only a very few hairs at their base within, and the style has a line of distant hairs in front.

This interesting addition to the British flora was detected in July 1848 by the Rev. W. W. Newbould growing plentifully on a waste part of a field near Comberton in Cambridgeshire. It is parasitical upon *Picris hieracioides*, very many instances of its attachment to the roots of which were traced by the present writer on July 15, 1848, when he obtained the specimens figured. It was also found by Mr. Newbould and the writer in a deserted quarry near Giltar Head in Pembrokeshire on Aug. 18, 1848.—C. C. B.



Apl 1st 1849

2957.

STRIGULA Babingtonii.

Mr. Babington's Strigula.

CRYPTOGAMIA Lichenes.

GEN. CHAR. *Perithecia* subglobose, collapsing, at length opening by an irregular fissure, or minute pore. *Nucleus* at first gelatinous, at length rigid, becoming black and cracking when exposed. *Thallus* mostly produced beneath the cuticle. [Parasitic on coriaceous perennial leaves.]

SPEC. CHAR. Thin, effused, yellowish fuliginous-olive, studded with numerous punctiform similarly coloured perithecia.

THALLUS yellowish fuliginous-olive when wet, much darker when dry, very thin and easily separating from the matrix, forming small irregular patches 2 or 3 lines or more broad both on the upper and under surface of the leaves of Box, Laurel, *Phillyrea* and other evergreens, consisting of 2 distinct strata, of which the inferior is composed of radiating articulate or inarticulate variously branched irregular and sometimes moniliform filaments; the superior not always extending so far as the subjacent stratum and consisting of close-packed minute cells, which usually have a distinct endochrome. Perithecia globose above, but flattened below, cellular like the upper stratum, more or less collapsed above. Nucleus tinged with very pale red, consisting of delicate paraphyses and rather short often very irregular asci, which are much constricted below, and contain subcymbiform triseptate colourless sporidia.

The present curious production was first detected at Rushton in Northamptonshire on Box and Laurel in the beginning of Aug. 1848, and it has since been found by Mr. Churchill Babington at Cambridge, and by Mr. Mitten on *Phillyrea* and other evergreens at Hurstpierpoint in Sussex. It is probably extremely common, but does not seem to have been observed before, either in this country or on the continent, and its affinities are very puzzling. It resembles in outward appearance some species of *Asterina*, a genus of Fungi established by Dr. Léveillé, and at present entirely extra-Euro-

pean; but it has not the very short nearly globose asci and bipartite sporidia characteristic of that genus, and approaches more closely to the type of Lichens by the compact upper stratum of its thallus. It comes extremely near to *Strigula abietina*, Fr., a species of which I have not been able to procure a specimen, but whose thallus is evidently more intimately connected with the matrix even than in the tropical *Strigulæ*, which according to the observations of Dr. Montagne merely grow beneath the true cuticle, as is the case with many *Dothideæ*. It accords also in some degree with *Strigula lobulosa* described by Fries in the volume of *Linnæa* for 1830, of which Mr. Babington has sent me an authentic specimen. That is however a very obscure species, and appears to have been gathered in an imperfect state. Like *Strigula abietina* and the present species, it connects Lichens with Fungi very intimately; so closely indeed, that Fries is doubtful to which group to refer the genus, and has therefore registered it both in his *Elenchus Fungorum* and in his *Lichenographia Europæa*.

The Rushton and Cambridge specimens were more or less infested with a curious undescribed fungus which was sent to me some time since by Dr. Harvey from Dublin, under the appropriate generic name of *Microxiphium*. It is curious that a similar production occurs on some exotic *Strigulæ*, giving rise to the genus *Tricharia*. I do not however think that the fungus and *Strigulæ* are necessarily connected, for Irish specimens of the fungus from Dr. Harvey and Mr. D. Moore show no traces of the *Strigula*, and in the Sussex specimens from Mr. Borrer I do not find the fungus. It should be observed, that the leaves are so infested with one or more algæ, that it is not always an easy matter to ascertain the exact structure or colour of the *Strigula*. The sporidia resemble pretty closely those figured by Dr. Montagne in *Strigula Féei*.—M. J. B.

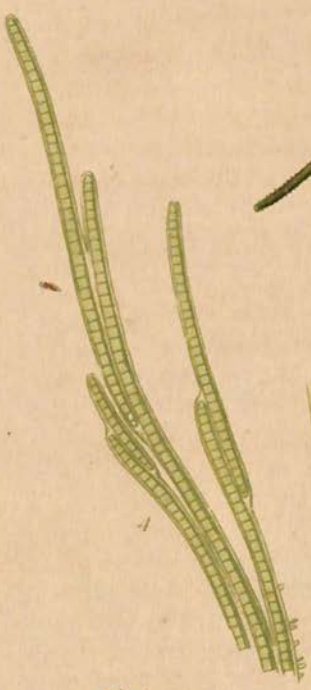
Fig. 1. A portion of the plant magnified, the thallus being overrun with *Chlorococcum vulgare*; fig. 2, as seen with a lower power; fig. 3, filaments of the lower stratum, connected by membrane, highly magnified.

The following figures are from Mr. Berkeley's analysis:—

Fig. 4. Perithecium with the upper cellular and lower filamentous stratum; fig. 5, portion of lower stratum showing moniliform flocci; fig. 6, portion of upper stratum highly magnified; fig. 7, asci and paraphyses; fig. 8, sporidia highly magnified; fig. 9, ascus with a paraphysis.

1

2



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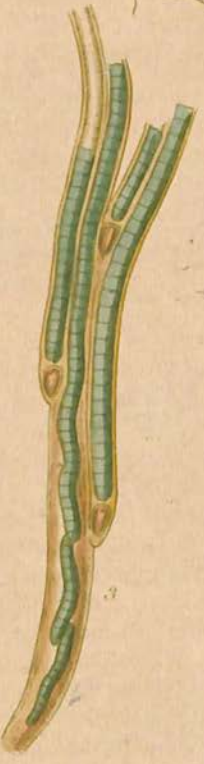

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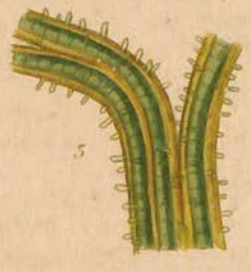


5

Mar 1st 1819

DESMONEMA Dillwynii.

Dillwyn's Desmonema.

CRYPTOGAMIA Algæ.

GEN. CHAR. *Plants* suberect, fasciculated, branched. *Branches* of two kinds; primary branches each with a connecting cell at its base; secondary branches without connecting cells. *Filaments* more or less coherent. *Endochrome* annulated.

SPEC. CHAR. Filaments cohering mostly in pairs, bluish green, becoming brown at the base of the plant.

Tolypothrix Dillwynii. *Hassall Brit. Freshwater Algæ*, 242. *t.* 68. *f.* 4, 5.

Microcoleus Dillwynii. *Harv. Man.* 169.

Conferva vaginata. *Dillw. Conf. t.* 99.

THE present genus approaches very closely to *Calothrix*, (taking *C. fasciculata*, Ag. as the type of that genus,) but differs in possessing, besides the ordinary branches of *Calothrix*, each of which has a connecting cell at its base, other branches without connecting cells and formed by dislocation of the endochrome and subsequent elongation of each separated portion. We propose to include in the genus, besides the present species, *Scytonema cirrhosum*, *t.* 2920, which we had included in our genus *Cœnocoleus* (see description of *t.* 2940), but which further careful examination shows to belong to *Desmonema*, some of its branches having connecting cells at their base, which is not the case in *C. Smithii*. For the specimens now figured we are indebted to the kindness of Mr. Ralfs, who has also furnished us with notes, from which we have derived much assistance.

Plant minute, flaccid, much-branched, seldom a quarter of an inch in length, varying in colour from brown to bluish green. Filaments usually cohering in pairs. Sheaths inconspicuous, except those of the older filaments at the base of the plant, which become thickened and of a reddish brown colour. Endochrome annulated, more evidently so in the recently

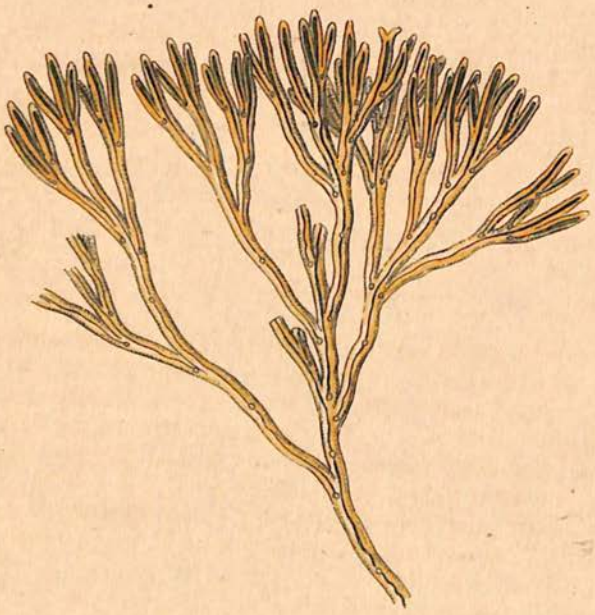
formed filaments than at the base of the plant, dotted from the presence of minute granules: joints about twice as broad as long, the terminal one somewhat dilated and hemispherical. The branches towards the base of the plant are seated each upon a connecting cell of an ovate or cordate form, resembling those in the genus *Rivularia* and the filaments of the *Nostochineæ*. As to their true function we are unable to satisfy ourselves, though we quite agree with Mr. Ralfs in considering them totally distinct from sporangia. The plant possesses other branches, formed, as Mr. Ralfs truly observes, by a dislocation of the endochrome, each separated portion becoming elongated, the lower portion towards the apex of the plant, and the upper portion towards its base, and each parallel and coherent with the other, and not usually separating until another dislocation has taken place in the endochrome of one of them, so that the filaments cohere mostly in pairs throughout the plant, though sometimes four or more filaments are coherent within one common sheath. He also remarks that the apparent branch (which is really a portion of the original filament) always extends beyond the filament from which it appears to be given off.

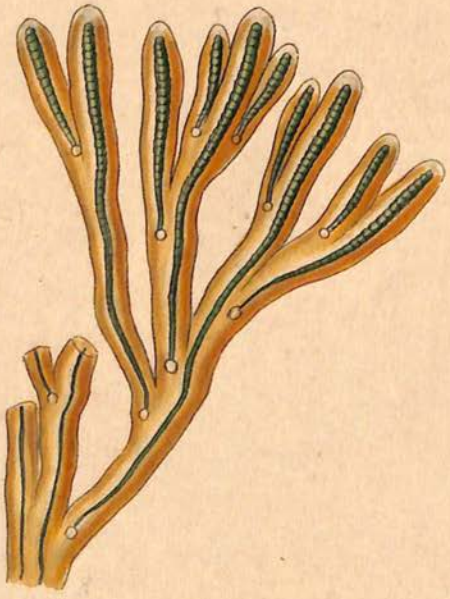
The sheaths of both the British species of *Desmonema* have commonly numerous minute papillary or clavate bodies upon them (fig. 5). We are unable to satisfy ourselves whether these bodies represent the anastomosing rootlets of *Rhizonema* (see *t*. 2954) and the numerous delicate fibres intermixed with the filaments of *Calothrix fasciculata* and other species, or are altogether extraneous to the plant; we are inclined to the latter opinion.

D. cirrhosum differs in having much denser sheaths to the filaments, and in the secondary branches being most frequently included (several together in one common sheath) as in *Cœnocoleus*.

Found on mosses in a rapid mountain rivulet, Cader Idris, August and September, by Mr. Ralfs; on moist rocks, Co. Antrim, by Mr. Moore; on rocks at the head of the Swansea valley, by Mr. Motley.—M. J. B. and G. H. K. T.

Fig. 1, plant natural size; fig. 2, slightly magnified; fig. 3, portion from near the base (Mr. Thwaites's drawing); fig. 4, near apex; fig. 4 *a*, ditto still more magnified; fig. 5, portion of the lower part covered with the minute clavate bodies.





Ad. Pl. 1849.

PETRONEMA fruticulosum.

Shrub-like Petronema.

CRYPTOGAMIA Algæ.

GEN. CHAR. *Plants* densely cæspitose, erect, somewhat regularly branched. *Branches* free, with obtuse rounded apices, and each with a connecting cell at its base. *Endochrome* annulated, increasing in diameter towards the apices of the filaments.

SPEC. CHAR. . . . . .

THE present species, where it occurs, forms a frustulose, areolated, olive-brown crust upon the wet perpendicular surfaces of limestone rocks, to which it adheres so slightly as to be very readily detached. The plants are densely crowded in little hemispherical masses, which together produce the peculiar areolated appearance of the crust.

Each separate plant consists of a single filament at the base, which is from 1–4 or even more times tri- or tetra-chotomously branched, and thus a fruticose habit is given to the species. Each branch has a connecting cell at its base, and sometimes one also at about the middle of its length. The very thick cartilaginous sheaths are of a pale brown colour towards the base of the plant, but darker upwards, except at the apices, which are frequently nearly colourless. The endochrome is of a dull green colour, extremely narrow and indistinctly annulated; towards the ends of the filaments, however, it becomes much wider and slightly moniliform.

The present genus is closely allied to *Calothrix*, but differs in its regular mode of branching, and in the very obtuse and smooth apices of the filaments.

Found on St. Vincent's Rocks, near Bristol, during the winter months.—G. H. K. T.

2960.

MELILOTUS arvensis.

Field Melilot.

DIADELPHIA Decandria.

GEN. CHAR. *Calyx* of 5 nearly equal teeth. *Petals* distinct, deciduous. *Keel* obtuse. *Filaments* of the stamens filiform, not united with the claws of the petals. *Pod* subglobose or oblong, 1-celled, 1–4-seeded, indehiscent, longer than the calyx. *Ovary* straight.

SPEC. CHAR. Racemes lax. Pedicel half as long as the calyx. Wings and standard equal and longer than the keel. Pods ovate, obtuse, mucronate, rounded and slightly keeled on the back, transversely plicate-rugose, glabrous. Leaflets obcordate or oblong, serrate, uppermost lanceolate. Stipules subulate, entire.

SYN. Melilotus arvensis. *Wallr. Sched. Crit.* 391. *Scr. in DeCand. Prod. v.* 2. 188. *Fries Nov. Fl. Suec.* 233. *Coss. et Germ. Fl. Par.* 126; *Atl. t.* 11. E.

M. diffusa. *Koch in DeCand. Fl. Fran. v.* 5. 564.

M. officinalis. *Koch Syn. Fl. Germ. ed.* 2. 183. *Ledeb. Fl. Ross. v.* 1. 537. *Gren. et Godr. Fl. Fran. v.* 1. 402.

M. Petitpierreana. *Koch Syn. Fl. Germ. ed.* 1. 167.

THIS recent addition to the British Flora was detected by a small party of botanists, consisting of Messrs. Borrer,

G. S. Gibson, W. W. Newbould and C. C. Babington, in the sandy district near Thetford, July 28, 1848, and was afterwards noticed, Aug. 2, 1848, by the present writer, near Cambridge. Mr. G. S. Gibson is believed to have since found it near Saffron Walden, Essex. It is easily recognised if attention be paid to the relative length of the petals and the shape of the ripe pod.

Root fusiform, biennial. Stem branching from near its base, a foot to a foot and a half in height, ascending, glabrous. Stipules subulate, entire. Leaves ternate, on short channeled stalks; leaflets of the lower leaves obcordate or obovate-oblong; of the upper gradually narrower and smaller; all unequally but finely serrate. Raceme long, slender, lax; its central stalk finely hairy. Pedicels very short, arcuate, slightly hairy. Bracts subulate, rather hairy, as long as the pedicels. Calyx glabrous; its teeth broadly subulate, shorter than the tube, slightly hairy. Corolla yellow. Standard as long as the wings, longer than the keel. Pod oblong, blunt, mucronate, transversely rugose-plicate, glabrous, rounded, but with a strong prominent rib both above and below, brown. Seeds oblong, not compressed; hilum forming a slight notch, not a deep hollow.

Much difference of opinion has been expressed about the name rightly belonging to this plant. Koch has recently been led to suppose it the typical *Trifolium Melilotus officinalis*, Linn. (*Fl. Suec. ed.* 2. 258), but Fries (*Summa*, 163,) conclusively shows that the Linnæan plant is what Persoon and Koch have called *M. macrorhiza*, and most other botanists, including those of Britain, have denominated *Trifolium officinale*, or *Melilotus officinalis*. *M. Petitpierreana* of Willdenow is a white variety of this species which has not as yet been found in Britain.

Our figure is taken from specimens gathered near Cambridge, on Aug. 2, 1848.—C. C. B.

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ERRATA.

2869. The carpel is erroneously figured without transverse wrinkles.
In the SYN. from Ray, *insert* floribus *before* ex alis.
2870. In the SYN. from Ray, *erase* the commas, and *for* 376 *read* 250.
2875. Second page, line 17, *for* Wilmingdon *read* Willingdon.
2883. Last page, line 7, for *glutinosus* read *glandulosus*.
2888. The mark of reference, *a*, is omitted on the plate.
2898. At the end, a reference should have been given to the lower magnified figures, which represent *C. Epithymum*.
2901. At the end, *add*, *a*. magnified outline of *P. muticum*.
2907. In SYN., *for Dec.* 1843 *read v.* 2. 669.
Second page, last line but one, transpose the *f* and *g*.
2908. Third page, lines 8 and 9, *erase* 'planted in dry soil they become decumbent and root at the joints.'
2920. For corrections see descr. 2940.
2923. Second page, line 14, *for* Not *read* Nut.
2927. Second page, *erase* the Generic Character, and *substitute* that on the foregoing page.
2930. Second page, lines 23 and 24, *erase* "which has been recently found in Surrey by Mr. Watson, and near Bristol by Mr. Borrer." [Mr. Watson's plant was *R. tripartitus*, DeC., since figured, t. 2946, and Mr. Borrer's probably *R. confusus*, Gren. & Godr.]
2955, 2956, 2957, 2959—bottom of plate, *for* April 1st *read* May 1st.

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